NATIONAL PETROLEUM NEWS

Three Graceful Bows to Mark the Exit Of the Famous Q. D. A.

By Ward K. Halbert
N. P. N. STAFF WRITER

CHICAGO, Aug. 25

SEPTEMBER, 1928, will see the famous Quantity Discount Agreement abolished, or revised beyond recognition in the marketing territory in the middle west of the Standard Oil Co. of Indiana.

This became known here Aug. 25, when representatives of principal oil marketing companies in this territory began preparing the minds of their customers—dealers and large consumers—for the radical revision in the gasoline price structure.

No definite date has been set for the big change. Officials of no major company will acknowledge responsibility for taking the lead in this move to do away with the system of price concessions, based on volume of deliveries in both the tank wagon and service station trade, which has been in effect since July, 1925.

They say the Q. D. A. operates to make them lose money on a large share of their business under existing price conditions and they are going to cut it out, gradually but completely, before Oct. 1.

While no official announcement has been made, it seems to be well understood in the trade that the elimination process will consist of three separate steps—each to be completely accomplished before th next is started.

The first step is to be local to Chicago in its application and the oil companies are already working on it. It is to eliminate all specal price arrangements and reduce Chicago business to strict conformity with the terms of the Q. D. A. as they apply generally in the territory. This is to be done by Sept. 1.

The second step is undoubtedly the most important of the three. As soon as the published Q. D. A. is made to apply in actual practice to Chicago transactions, the retail Q. D. A. will be eliminated throughout the whole territory where Standard of Indiana markets.

In other words, the service station discount of 2 cents a gallon to consumers of 200 or more gallons a month will be permanently discontinued. No final date is anywhere suggested for this. Most such contracts have a 30-day cancellation clause. Some are even shorter.

The third step will be the complete revision of the wholesale (or tank wagon) Q. D. A. There is quite a little uncertainty in the minds of the trade as to what this will be. Some believe the trade will go back to the old flat tank wagon price 2 cents under the posted retail price. Others say the dealers' spread will be 3 cents. Others insinuate that only the bigger buyers in tank truck lots will enjoy a 3-cent spread while smaller ones will get less, say 2 cents or even 1 cent for small buyers from the tank wagon.

One thing is certain. The trade will not have long to wait. All agree that the nondescript Chicago price structure must be made to "go through the screen" of the published Q. D. A. by Sept. 1, that the retail discount must go, and that October will see a new order of things set up.

A brief canvass of the small jobbers and big operators of service stations in Chicago, Aug. 25 disclosed that they are pleased over the change. Small dealers, garagemen, hot dog merchants and soda pop accounts are ex-

What the Q. D. A. Is

THE Quality Discount Agreement is a system of recognized concessions from the posted price, to both tank wagon and service station gasoline purchasers, the amount of the concession determined by the volume of purchasing per month.

It was put in effect July 1, 1925, by the Standard Oil Co. of Indiana, and adopted, with changes, by practically all oil companies in the 11 states of its territory.

By the present scale the purchaser from the tank wagon of more than 750 gallons a month receives a check from the Standard Oil Co. for a half cent back on each gallon, for which he had paid on delivery the tank wagon price.

If he buys more than 2000 gallons a month he receives back 1 cent.

6000 gals.	1½ cents
10,000 gals.	2 cents
15,000 gals.	3 cents

The purchaser from the service station who buys more than 200 gallons a month receives back 2 cents from the full price he paid on delivery.

pected to consider it a bitter pill. The jobber's situation clearly will be improved.

U. S. Motor gasoline costing 9.75 cents in Oklahoma with a freight charge of 2.40 cents and an inspection fee of .01 cent brings the price of gasoline delivered in Chicago to 12.25 cents a gallon. The posted tank wagon price is 15 cents in Chicago, but the maximum published Q. D. A. allows a discount of 3 cents from that figure to large buyers, and some of them get an additional penny in secret rebate. This makes 12, or even 11 cents, the "net tank wagon" price. Jobbers naturally are glad to quit selling for 11 or 12 cents gasoline that costs them 12.25 cents.

LARGE retailers, men who own one or more good service stations but have no bulk plant, express no concern about what they may lose temporarily by the revised schedule. Some of them are going to have special concessions of a penny or so a gallon on their purchases taken away from them this current week. But they say they are willing to take it along with the rest. They believe a strict application of the Q. D. A. will do them more good than harm.

Some of these big dealers believe their gallonage will improve when the general resale agent's margin is cut; not because it will stimulate gasoline consumption but because it will put some of their most annoying competitors out of business.

"Men who operate cut price stations and depend on cut prices to sell gasoline will be hurt most", one dealer said. "They will have no sales argument without a chance to cut prices and if they cut prices on a narrow margin they will have no profit. I am for it."

Another dealer said, "The curb pump at the wayside lunch counter will disappear. Selling gasoline and oil outside the house is an annoyance to a lunch counter man. He is not an oil merchandiser, and only serves the cars that come in accidentally and demand service. Without 4 or 5 cents a gallon he will not worry with it."

From the standpoint of the Independent refiner, the abolition of the retail Q. D. A. is a boon. It means that these refiners' customers will be able to save 2 cents a gallon on their truck fleet and bus accounts. The refiners can make the same saving at their own stations if they have any—and most of them have.

If it is true that the wholesale Q. D. A. is to be cut to a spread of not more than 3 cents a gallon, the development will amount to a tank wagon advance of possibly 1 cent. Jobbers in different territories have different opinions as to what the Q. D. A. amounts to, when compared to their total gallonage. Some say it is an expense that approximates 2 cents a gallon on total gallonage in metropolitan communities and less than 1 cent a gallon in rural communities. At least it amounts to small tank wagon advance.

This action by the major distributors of the middle west probably came about in time to halt a rather widespread protest against the Q. D. A. on the part of Independent jobbers in this territory. They were just about to be asked to express themselves about the Q. D. A., and its effect on prices, by a number of state jobbers' associations. In fact the State Executives' Club, composed of presidents and secretaries of state marketers' associations, meeting Aug. 23 in Chicago, had already decided to obtain the consensus of opinion of independent oil jobbing companies on this subject.

All but one of the states of Standard of Indiana territory was represented by an oil man, an association man or both. It was a specially called meeting and although they had a few other matters to consider, the "piece de resistance" was the well known Q. D. A.

The meeting's last official act was to devise a list of six questions to comprise a brief questionnaire. The association men agreed to submit the questionnaire to the oil jobbers of their respective states, requesting them to answer the questions seriously and confidentially. Only a consensus of opinion will be made public. The questionnaires will be going out this week from the state association headquarters. Here are the questions:

1. Are you in favor of the Q.D.A?
2. Are you in favor of completely eliminating it?
3. What is your present Q.D.A. or substitute therefore?
4. Why is it necessary for you to maintain same?
5. When are you going to eliminate your Q.D.A. or substitute therefore?
6. Are you in favor of legislation to prohibit discounts to any class of trade?

ON JULY 1, 1925 the Q.D.A. was adopted by the Standard Oil Co. of Indiana, much to the surprise of the neighbors. In fact, little Q. D. A. was out playing around the yard before other oil companies in those 10 states even suspected such a thing.

For a while the child was a lot of fun. She dragged out confidential price agreements from unsuspected places and let them die of exposure. She picked the grapes off the secret rebates and took special delight in letting the competitor's kitty out of the sack. But in due time the kiddish pranks became tiresome and, after all, she ran to a lot of expense, seemingly unnecessary expense.

All these matters were discussed seriously by the oil men and state secretaries. They admitted freely that the Q.D.A., when conceived, was only a formal and legalized interpretation of conditions common among Independents. The Standard adopted this open (however complicated and changeable) policy to meet competitive conditions as they were in 1925.

On the other hand, they agreed that the Q.D.A. operates to discriminate against a host of motorists who buy gasoline in small quantities. It was pointed out that the Mississippi legislature has passed a law to that effect, and that the Wisconsin Department of Markets has operated consistently on that general theory.

It has not been more than two months since Don Montgomery, economist for the Wisconsin Department of Markets, in an open letter to the oil men of the state, suggested that they avail themselves of present narrow margins and abolish the Q.D.A. from their marketing policies. He asked the Wisconsin jobbers what they thought of the Q.D.A. and they answered him in no uncertain terms.

In substance the oil men told Mr. Montgomery they would be glad to get shed of the Q.D.A. and everything like it, but could do nothing about it until such a time as the major companies saw fit to cut it out.

Coming Meetings

Petroleum Section, National Association of Credit Men, Palmer House, Chicago, Sept. 4, 5, 6.

Ohio Petroleum Marketers Association, Commodore Perry Hotel, Toledo, O., Sept. 5, 6, 7.

Wisconsin Petroleum Association, Wausau Hotel, Wausau, Wis., Sept. 12.

National Petroleum Association, Hotel Traymore, Atlantic City, N. J., Sept. 19, 20, 21.

North American Gasoline Tax Conference, Peabody Hotel, Memphis, Tenn., Oct. 1, 2, 3.

National Safety Council, Petroleum Section, Hotel Pennsylvania, New York City, Oct. 1 to 5.

Big Four State Jobbers, Kansas City, Mo., Oct. 3, 4, 5.

American Oil Men's Association, Hotel Statler, Detroit, Mich., Oct. 9, 10, 11.

Wisconsin Petroleum Association, Green Room, Schroeder Hotel, Milwaukee, Oct. 17.

Petroleum Division, A. I. M. E. Tulsa, Oct. 18 & 19.

International Petroleum Exposition, Tulsa, Oct. 20 to 29.

California Natural Gasoline Association, Los Angeles, Nov. 13, 14.

Independent Oil Men of America, Stevens Hotel, Chicago, Nov. 19, 20 and 21.

American Petroleum Institute, Stevens Hotel, Chicago, Dec. 4, 5, 6.

Wisconsin Petroleum Association, Schroeder hotel, Milwaukee, Dec. 12.

All Flush Oklahoma Fields to Produce Only to Meet Market Demands

By John Power
N. P. N. STAFF WRITER

TULSA, Aug. 23

CONSERVATION rulings under which production from all fields in Oklahoma would be restricted to a quantity which can be absorbed readily may be issued soon by the State Corporation Commission.

Oil operators of the Seminole area, many of whom are major companies whose activities are state-wide, have voted to petition the commission to issue an order restricting production within the state in the interests of conservation.

This was the result of a general meeting of operators held Aug. 21, at the call of Seminole district umpire Ray M. Collins.

The plan which the commission will be asked to follow limits flush fields, but does not disturb the older settled areas. Under the plan, flush fields are defined as those in which the per well average exceeds 100 barrels per day. A stated amount of oil to be produced in the state is arrived at through consultation with the pipe-line companies, this amount to be changed every 30 days to conform to changing conditions. The total production of fields in which the per well average is less than 100 barrels daily is subtracted from the amount allowed the state and the remainder is apportioned to the flush fields in proportion to their potential production.

The flush fields are to be divided into units, the potential production of each unit being arrived on different dates to avoid crowding the production on any one day. A new potential production for each field is to be determined during the last five days of each 30-day period by a 24-hour open-flow test.

The potential allotted to each lease in each unit is to be arrived at by an open-flow test on the first and fifteenth of each month. This lease potential will receive its prorata of the total amount allocated to the unit in the proportion it bears to the total potential allocated to the unit.

The limits of each field are to be defined and extended by the Committee, whose personnel consists of Ray M. Collins, umpire, and J. J. Conry, Carter Oil Co., R. B. Pringle, Independent Oil & Gas Co., R. F. MacArthur, Barnsdall Oil Co., E. J. Nicklos, The Texas Co., J. S. Sidwell, Prairie Oil & Gas Co. The plan, which was suggested by this same committee, received a vote which totaled 12 in favor of it, two opposed, seven not voting and 35 absent.

Wildcat wells are to be permitted to produce 100 barrels per day for the first 30 days after bringing in of the well. During this 30-day period no offset wells are to be started without a permit to drill from the committee controlling the area. As soon as practicable, a meeting of leaseholders in the area surrounding the wildcat is to be called to consider future development of the field.

The Little River area will not be disturbed by the present plan. There is now a corporation commission order in effect governing the output of this field, and it was thought best to leave this pool as it is. Until Sept. 10 production in the southern extension, or the restricted area as it is sometimes called, is limited to 1600 barrels per day from each 40-acre tract. After Sept. 10, production on the entire field will be held to a total of 125,000 barrels per day until Nov. 1. After the latter date the same restrictions as are applied to other flush areas will apply to Little River.

The application of this plan will affect several pools which might be considered past the flush stage. All fields in the Greater Seminole group, which includes the original Seminole City field in twp. 9-6, the Searight field in sections 33 and 34, twp. 10-6 and sections 3 and 4, twp. 9-6, the Earlsboro field in twp. 10-5, the Bowlegs field in twp. 8-6 as well as the Little River pool, which extends through a part of twps. 8-6 and 7-6, will come under the head of flush fields, as all of these pools are still averaging in excess of 100 barrels per day. Field problems of operation will be many, as all leases will have to be restricted to some extent, and it may prove hard to restrict some of the small wells that are making water.

Of the areas likely to prove the most troublesome from several standpoints the St. Louis Wilcox sand area and the recent extension to the Earlsboro field are the most important. The two dissenting votes to the plan as given were those of T. B. Slick, whose Hembree lease is in the present heart of the big production in St. Louis, and the Sands Petroleum Co., who have what appears as a possible producing lease in the area around the Burke-Greis well, completed recently for about 3700 barrels in the SW NE of 6-9N-6E, Seminole county.

Mr. Slick gave a problem of operation as his reason for voting against the plan. He said that he was in no way opposed to any restrictions which oil operators as a whole were desirous of effecting, but that for him to shut in the big wells on his Hembree lease would be apt to ruin them, as well as force a great deal of Wilcox sand oil into the Simpson, which has been produced from for some time, and from which the pressure has been released. In support of this contention he said that in his No. 4 Hembree, in the SE SW SE of 19-7-5, the well was making about 1100 barrels of heavy black oil daily from the Simpson, and after the Wilcox sand was penetrated not a barrel of this black oil could be discerned in the wells' production.

This indicated to him that the pressure of the Wilcox oil as it flowed past the Simpson was so great that it shut off the production from the latter formation. He said that a back pressure sufficient to cut down production from this well, which is making about 10,000 barrels of Wilcox oil daily, would put so much pressure on the Simpson that the Wilcox oil would be forced into the Simpson, and that it might even be forced into adjacent wells which are being produced from the latter formation. He said that in a few months, when a number of wells have been completed in the field and the pressure on Wilcox sand reduced, he would be entirely willing to shut down his wells to any extent agreed upon.

The Sands Petroleum Co. said that it was desirous of drilling its property in the Earlsboro extension. This company said that it had refrained from developing its Little River properties with the understanding that wells in other areas might be produced. Representatives of the company said that they were desirous of obtaining the revenue from the leases in the older areas, which they did not think should be disturbed. It is probable that both T. B. Slick, Inc. and the Sands Petroleum Co. will voice protests at the hearing which the Corporation Commission will hold with reference to the issuing of the order.

The actual operation of the plan which limits the Little River pool to 125,000 barrels per day has been left up to the committee. This figure will require some proration, which according to Umpire Collins will probably be on the potential production basis.

Seneca Oil Refinery Is Sold To Swan-Finch Company

CLEVELAND, Aug. 28

THE Seneca Oil Works, Warren, Pa., for a third of a century one of the leading Independent Pennsylvania refineries, has been sold to the Swan-Finch Refining Co., a subsidiary of the Swan-Finch Oil Corp., New York. The deal was announced today with the completion of the final details of the transaction.

The Swan-Finch Refining Co. is incorporated in Delaware with a capitalization of $500,000. Its acquirement of the Seneca Oil Works puts the oldest of the old line Standard Oil companies into the refining business.

The Seneca Oil Works was founded in 1894, according to George P. Brockway, who has been identified with it from the beginning. O. F. Hoffman was one of the founders and he was president of the company until 1921. In 1895 Mr. Brockway became treasurer and manager of the company. He held this position until 1921 when he was made president and manager.

There are but 20 stockholders in the company, these belonging mostly to the Brockway and Hoffman families, Mr. Brockway says.

The plant has a capacity of about 800 barrels a day of Pennsylvania crude. Notwithstanding the fact that Mr. Brockway started in the refining business more than 35 years ago he kept abreast of the times and only a few months ago finished the installation of a modern filter house with clay roasting and handling equipment of the latest type, a new type circulating crude still and modernization of his boiler plant. These were described in this paper.*

Mr. Brockway, it is stated, will retire from connection with the company he has headed for so long. E. C. Gardner, associate manager and assistant treasurer and Harry S. Peterson, superintendent of the refinery it is understood will remain in their present positions.

George P. Brockway, president and manager Seneca Oil Works, has been in charge of operating the plant since 1895

Swan-Finch Oil Corp. was founded in 1853, according to Munson Burton, vice president, first as a fish oil company. The business of the organization is still made up about 25 per cent of fish oils, according to Mr. Burton. Later the company became active in the compounding of lubricating oils and specialties. It has a plant at Bayway, N. J.

W. G. Moncrieff is president and general manager of Swan-Finch Oil Corp., Mr. Burton vice president and E. V. Moncrieff secretary and treasurer.

It is expected that the new owners will considerably increase the capacity of the Seneca plant shortly but it is the purpose to continue to run Pennsylvania oil exclusively.

*National Petroleum News, May 2, 1928, page 17; May 9, 1928, page 49 and May 16, 1928, page 49.

More Crude for Small Refiners Seen In Larger Sinclair Line

CLEVELAND, Aug. 27

THE increase of 25,000 barrels in the daily capacity of the Sinclair Pipe Line from the Little River pool in the south end of the Seminole area to Chicago, may cause a realignment of pipe line deliveries of crude from the Mid-Continent to eastern refining centers and enlarge the crude supply of the smaller eastern Independent refiners.

Construction of the enlarged Sinclair line will begin shortly and will consist of 8, 10 and 12-inch pipe. There will be 70 miles of 10-inch line from Little River to Drumright, Okla., where the present Sinclair trunk line to Chicago will be met. The 360-mile loop from Drumright to Chicago will have the full increased capacity of 25,000 barrels.

The present capacity of the Sinclair line to Chicago is 50,000 barrels daily. Of the volume of oil transported Sinclair Refining Co. is taking about 27,000 barrels daily for its East Chicago, Ind., plant and the remainder is being delivered to the Whiting plant of the Standard Oil Co. of Indiana. Prairie Pipe Line Co. at present is supplying the remainder of the needs of the Standard's refinery but with the increased capacity of the Sinclair line, of which Standard owns half, there is speculation that less crude may be taken from the Prairie. Should this be the case there is belief Prairie may seek other outlets for crude in the Chicago and Toledo refining districts, particularly.

Rumors also persist that Sinclair Consolidated Oil Corp. which owns Sinclair Refining Co. and the other half interest in the Sinclair pipe line, may sell the half interest to Standard of Indiana and merge with Prairie Oil & Gas Co. Should such a consolidation take place it is probable that the Sinclair refinery at East Chicago would be supplied through the Prairie line.

The Prairie line has lost virtually all of its former traffic of oil to points east of Ohio because eastern refiners have found it cheaper to pipe the crude to the Gulf Coast and tanker it to the Philadelphia and New York refining districts. The eastbound capacity of the Prairie is about 120,000 barrels a day.

Prairie has a loop into Wood River, Ill., where Standard has a refinery and early reports were that Sinclair would build a loop there. Because officials of both Standard and Sinclair said there were no plans at present for enlargement of their plants there has been much speculation in the Mid-Continent about the possibility of the Standard preparing to move its crude supply through lines in which it was financially interested.

Capacities of 19 pumping stations on the Sinclair line between Drumright and Chicago will be increased.

Late Market Changes

PHILADELPHIA, Aug. 28.—On Aug. 29 Atlantic Refining Co. will advance kerosene prices 1 cent throughout Pennsylvania and Delaware, it was announced this afternoon. New tank wagon price will be 15 cents. Last previous change was a 1 cent advance on June 14.

Record Producer In West Texas
(By Telegraph)

HOUSTON, Aug. 28.—Gulf Production Co.'s new No. 13 test on the Runnels school land survey, in the northern part of the Yates shallow field of Pecos county, set a new record for high initial production in West Texas. It tested 5232 barrels in one hour, or at the rate of 125,568 barrels daily.

NEW YORK, Aug. 25.—Weight limit of air mail today is 50 pounds. Size would not exceed that stipulated for air express, which is not more than 60 inches long, 19 wide and 4 inches deep. Single pieces via air express must not weigh over 200 pounds.

Taxis Carry Promoters Who Sell $10 "Memberships" to Farmers

CHICAGO, Aug. 27

SMALL time promoters hailing from Chicago are rolling up to Michigan farmhouses in taxicabs and rolling away with $10 bills which represent membership fees in a co-operative oil marketing scheme.

The promoters must work fast because taxi rates are high and the proposition they are offering farmers and townspeople does not stand the test of much analysis as to its soundness.

The Michigan Securities Commission had time enough to ponder over the scheme and one promoter was jailed last Tuesday on a charge of violating the Michigan blue sky law.

The scheme which was worked in and about Adrian, and Lenawee county extensively, is this. The farmer is given a high pressure sales talk about a saving of 25 per cent on his gasoline, oil, tires, and accessories, and any service the cooperative company being promoted has to offer.

The promoter is active with glib language and a radiant picture of large savings in motor fuel, oil and supply costs. The farmer's thoughts are plastic and are being moulded by the prosperous appearing stranger who has come from town in a taxi. He is not wary of Greeks bearing gifts. Besides this is not a horse before Troy; it is a taxicab that encases a pleasing personage who talks of savings and profits.

The stranger flashes a membership certificate book containing an agreement of what the company will do for the member, once his $10 is paid. The agreement looks imposing. True, there is no engine engraving about the border like on a Liberty bond, but the paper is bank check safety paper and surely that implies authenticity.

And what is the agreement? The company will not take the $10 itself at once. The prospective member is to be safeguarded. His $10 bill is to be placed in escrow with the Commercial Savings bank of Adrian, for example. The bank is to hold the money until the company which at Adrian styles itself the Customers Oil Co. of Lenawee County (cooperative), has bought, leased, or established a filling station. Then the money goes to the company "immediately for operation and maintenance purposes, and the escrow agreement terminates."

This provision, which is duly set forth in the "membership" agreement is regarded by Michigan oil companies as the biggest joker in the whole deal. It allows the Customers Oil Co., to take out all funds held in escrow in any community by making a lease for only one month with a hot dog stand, or a station of any description.

Another joker the farmer overlooks —and the promoters sidestep in their glib talk—is that the farmer can only make his "saving" on gasoline and oil and accessories by driving to the company's station in town. The company plans no tank wagons to haul to the farmer, as the oil companies do.

On gasoline, the commodity purchased in largest volume, the farmer very likely would use more than that represented in the mythical quarter "saving" by having to drive several miles to secure his supplies.

The agreement is signed by the member—the company or its officials sign nothing. There is not even the printed likeness of a signature. There is only the printed name of the company at the top of the certificate.

THE full text of the membership certificate labelled agreement, follows:

"The certificate entitles the undersigned, in proportion to the amount of his certified cash purchases from Customers Oil Co. of Lenawee County, to share, every thirty (30) days, by regular adjustment at the office of the company in Adrian, Michigan, in fifty (50) per cent of the net profits realized on the business of all service stations or filling stations, owned or operated by said Customers Oil Co. of Lenawee County.

"Agreeable to these conditions, the undersigned hereby subscribed ten ($10.00) dollars, receipt of which is hereby acknowledged, to a specially designated fund, to be known and protected by escrow agreement with the Commercial Savings Bank of Adrian, Michigan, as Customers Building and Purchase Fund, which shall be used only and exclusively in securing (by lease or purchase), establishing, operating and maintaining one or more filling stations in the County of Lenawee, State of Michigan.

"It is further provided and agreed that unless one or more service stations are (as herein proposed and specified) established, either by lease or purchase, in Adrian, Lenawee County, Michigan, the first amount of this subscription of Ten ($10.00) dollars is to be returned out of escrow, in full to the undersigned.

"In keeping with the purposes above specified and set forth, the undersigned Subscriber, or Member, pledges himself to purchase from Customers Oil Co. of Lenawee County, at Adrian, Michigan, when consistent and practicable, and whenever possible of affiliated service stations, in said county, all those items supplies, and service by it and then provided for his use.

"Further the undersigned pledges himself not to enter into any agreement or subscription which shall in any way impose or prejudice upon, or jeopardize the business, good will, or success of (his) Customers Oil Company of Lenawee County.

"If a station is leased or purchased before the stipulated number memberships is secured, then, and in that event, the amount deposited in escrow at the bank above mentioned shall be delivered by said bank to the Customers Oil Co. of Lenawee County immediately for operation and maintenance purposes, and the escrow agreement terminated."

There is no "stipulated number of memberships" to be secured before a station is leased, bought or established mentioned in this certificate. Verbally the prospect is told that 300 members must be secured. That number is also mentioned in advertisements which have been published in the eager-for-revenue Adrian Telegram and in a coupon printed in the advertisement which coupon is addressed to the Commercial Savings Bank.

The first two paragraphs of one of these advertisements follows:

"Any practical plan that will enable a car, truck or tractor owner to keep a quarter out of every dollar he spends for oil, gas, tires and small accessories, need not go begging for approval.

"Such a plan was laid before the car owners of Adrian a week ago and the vote in favor of it now promises to be strong enough to carry the country—on a straight forward '50-50' self-saving-service principle."

THE 50-50 expression sounded well and it had a special meaning because the persons that financed the company were to receive only 50 per cent of the net profits; the promoters were to get the other 50 per cent and besides, it is said, $5 for each member they obtained.

The Michigan Oil Men's Association, under the leadership of H. H. Ragle, its president, quickly investigated the scheme and the attention

of the Michigan Securities Commission was called to it. Aug. 21 John T. Peek, secretary of the company, was arrested and held for a time in jail on charges of a farmer who had paid a solicitor $10.

Other officers are said to be James E. Hicks, president; George E. Bowen, trustee and publicity manager, and Franklin Miller, in charge of memberships. Names of none of these can be found in Chicago directories.

The company has already leased four service stations in and around Adrian but has no bulk plants. It buys gasoline under the Q. D. A.

It pays $150 a month for each of two stations and $180 a month to a man to run one of them. It is estimated that one station does 6000 gallons gasoline business a month which would entitle it to a discount of 3.5 cents under the 18.7 cent tank wagon price which farmers would have to pay for gasoline delivered to their homes. Members pay the full service station price of 20.7 cents and to make 25 per cent saving under the tank wagon price they would have to receive back 6.7 cents a gallon in profits from the cooperative company; that is 25 per cent off the tank wagon price they normally would pay any recognized oil company, plus the 2-cent station differential they pay the misnamed cooperative company.

This would mean the cooperative company must net 13.4 cents a gallon on each gallon of gasoline sold after all expenses. At this rate the cooperative company could pay only 7.3 cents for its gasoline and cost of operating. If its stations sell as much at 6000 gallons a month they are paying 15.2 cents a gallon or more than double the amount they could pay and make good on their promotional assertions.

And what of the taxi fares?

The members must go after their supplies; there are no deliveries and no credit.

Delay Gaging Roberts-Settles Wilbarger Congested

HOUSTON, Aug. 24

GAGING problems continue to confront operators engaged in prorating the Roberts-Settles deep lime, pumping-well field in Howard and Glasscock counties, West Texas. Because of these difficulties, it became apparent this week that the railroad commission's prorating order, officially effective Aug. 15, could not be put in force short of Sept. 1.

When actually operating, the prorating order will limit production to 15,000 barrels daily the first month and 25,000 barrels daily, thereafter, for five months.

Under field rules operators must have 48 hours notice to allow reconditioning before gaging of wells. Then full 24-hour gages are taken. In gaging, operators may produce their wells in such manner as they choose, but no swabbing or air lift practice will be allowed in future production practice.

Few of the wells will flow naturally, because of low reservoir pressures, thereby complicating the field situation. Some of the companies prefer not to build storage for test purposes, thereby delaying gaging practice until pipeline outlets are provided.

Gage figures so far taken on Howard-Glasscock county wells[1] include the following:

Company-Well	24-Hour Gage, in Barrels	
Magnolia Petroleum Co.		
Roberts 1	4200	(f)
Roberts 2	1039	(p)
Roberts 3	1000	(p)
Roberts 6	220	(p)
Roberts 7	500	(p)
Amerada & Rycade		
Roberts 1	623	(s)
F. H. E. Oil Co., & Moody Oil Corp.		
Roberts D-3	638	(p)
Roberts E-2	646	(p)
Roberts E-6	2850	(s&f)

(f)—flowing; (p)—pumping; (s)—swabbing; (s&f)—swabbing and flowing.

SINCLAIR Pipeline Co. is constructing a new 6-inch outlet from the eastern Wilbarger county area of the Greater Wichita Falls district, where production increases to about 35,000 barrels daily had brought about crude oil congestion.[2] Other pipelines serving the area are those of the Waggoner Refining, The Texas and the Humble companies.

Wilbarger congestion has represented lack of pipeline facilities rather than over-production in the generally accepted usage of the term. A clause in leasehold contracts reserves to the W. T. Waggoner estate the right of call at the posted field price, on oil produced from the Waggoner ranch, which brought about a question as to how far purchasing companies could afford to go in providing additional outlets.

Except in the South Vernon field, virtually all Wilbarger production comes from pools in the W. T. Waggoner estate. Production on the Waggoner ranch is distributed among fields about as follows: Grayback, 69 wells, 22,989 barrels; Consolidated, 37 wells, 3401 barrels; Rock Crossing, 426 wells, 7327 barrels.

SOUTH of Hendricks ranch development in Winkler county, west Texas, a test of the Arizona Mining & Engineering Co., in Sec. 10, Block B-12, threatens a mile and a quarter extension of producing territory.

At 2845-2850 feet, test will be made of oil that rose in the hole about 200 feet. Surface elevation of the test is 2742 feet and the lime formation was topped at about 2600 feet.

In Lea county, New Mexico, the Midwest Refining Co.'s No. 1 state, in 9-19S-38E, tested 250 barrels in 19 hours after being drilled deeper to 4112 feet. The well had been shut down 21 days while two 5000-barrel tanks were completed. A later gage showed the well making 257 barrels in 24 hours after further deepening to 4130 feet.

Empire Gas & Fuel Co.'s No. 1 state, drilled on Endura Oil Co. acreage in 8-21S-35E, pumps about 90 barrels of oil daily with considerably larger quantities of water at 3837 feet.

The status of other New Mexico tests follows:

Cecil Bordageset et al. No. 1 Hughes, 27-19S-38E, shut down at 3537 feet.

Cranfill & Reynolds, Inc., No. 1 state, 23-26S-36E, shut down at 160 feet; Cranfill & Reynolds, Inc., No. 1 Wilson, 23-25S-36E, location.

The Texas Production Co., No. 1 Cagle permit, 9-26S-37E, building road; The Texas production Co., No. 1 Moberly, 7-26S-37E, building road; The Texas Production Co., No. 1 Shepherd, 6-26S-37E, rig up and building road.

Marland Production Co., No. 1 Brooks, 8-20S-33E, rig up and drilling water well; Marland Production Co., No. 1 King, 26-25S-32E, rigged up; Marland Production Co., No. 1 Eaves, 19-26S-37E, shut down below 3000 feet; Marland Production Co., No. 1 Lynn, 26-23S-36E, drilling at 620 feet; Marland Production Co., No. 1 Sholes, 19-25S-37E, mudding 30,000,000 cubic feet of gas at 3030 feet.

Midwest Refining Co., No. 1 Farnsworth, 12-26S-37E, drilling at 3850 feet.

A. D. Morton et al, No. 1 state, 32-11S-38E, rig standing.

Hill & Abel, No. 1 Maechtel, 5-26S-33E, rigged up and drilling water well.

Curtis Drilling Co., No. 1 state, 22-18S-34E, shut down at 780 feet.

Skelly Oil Co., No. 1 Joyner, 26-25S-36E, shut down at 170 feet.

C. E. Reynolds Drilling Co., No. 1 Anderson, 29-13S-37E, drilling in redbeds at 1960 feet.

[1]—See map of field, page 19, Aug. 15, 1928 issue, NATIONAL PETROLEUM NEWS.

[2]—NATIONAL PETROLEUM NEWS, page 36, Aug. 8, 1928.

Electrically Operated Pipeline Cuts Labor and Maintenance Costs

By Paul Wagner
N. P. N. STAFF WRITER

CRUDE oil transportation records are being broken regularly in the operation of the Shell Pipeline Corp's new trunk system between McCamey, west Texas, and Healdton, Okla., where connection is made with the company's Mid-Continent facilities.

The 10-inch pipeline, more than 300 miles long, has handled 41,321 barrels of crude, daily average for the week, at its maximum. It regularly handles between 36,000 and 37,000 barrels daily as compared with a rated capacity of 35,000 barrels.

Three men at each of the 10 pumping stations between McCamey and Healdton operate the electrically equipped system. They consist of a chief engineer and two assistant engineers. Operators and gagers, who usually make up a part of pump station personnel, were eliminated under the new operating system. Flow gages are taken by the men handling the station equipment and telephoned to dispatchers at McCamey and Healdton.

Installations of electrical equipment under the Shell's construction and operating plans brought about two major economies: (1)—they allowed the building of compact stations, requiring only small sites for equipment and housing accomodations; and (2)—the personnel necessary to operate stations was materially reduced as compared with usual practice.

The 10 stations between McCamey and Healdton were each equipped with three motors, one of which serves as a stand-by unit. Similar installations were also made at four other stations from Healdton to Cushing, in Oklahoma.

Motors used are of squirrel-cage, induction type with rating of 400-horsepower, 2200-volt, 3-phase, 60-cycle, 1750 revolutions per minute, direct connected to centrifugal or multiplex pumps.

In each station there are an incoming line panel and three motor starting panels of the reduced voltage starting type, matching each of the three motors, installed by the Westinghouse Electrical & Manufacturing Co.

The first seven stations north of McCamey are equipped with Byron Jackson multiplex pumps of 35,000 barrels rated daily capacity and the other three stations, south of Healdton, with A. S. Cameron centrifugal pumps.

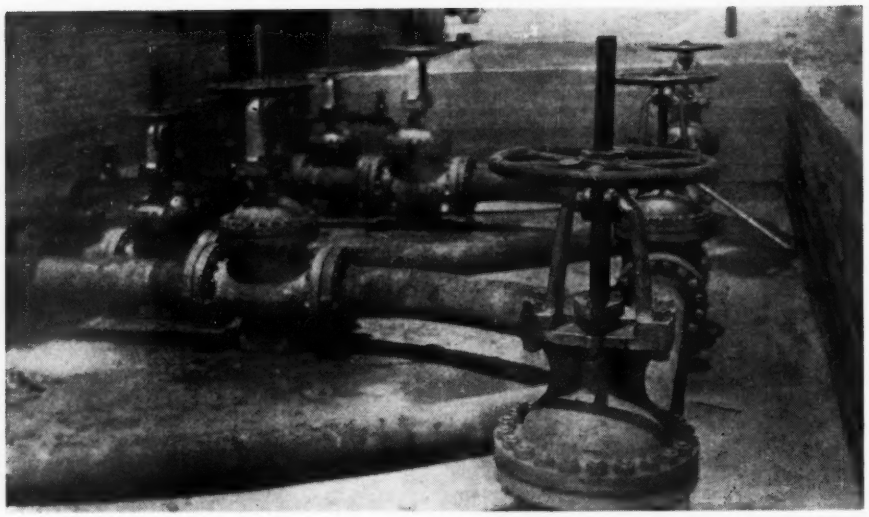
BY cutting the distance from McCamey to Healdton into 10 intervals a high velocity of oil flow can be maintained between stations. The smoothness of the constant stream of flow from the pumps is described as lessening the occurrence of blown gaskets and leaks in the line, thereby lowering cost of maintenance, giving flexibility of operation and ease of installation.

Oil moving from the south passes through strainers installed in a pit before being pushed into pump No. 1 at each station. The No. 1 pump is only for pushing oil to No. 2, from which the flow goes ahead into the main line toward the next station. A third pump is used as a stand-by, so that it may be placed in service should either of the other two be out of commission.

A SINGLE 1000-barrel working tank takes care of any overflow from pumping through the main line. In other words, if more oil is being pushed in from the south than the station pump will handle then the overflow goes into the working tank, equalizing pressure to avoid crowding. Any slackening of the main line flow allows the prompt emptying of the working tank.

The main line is operated at 700 pounds pressure and 350 pounds pressure is maintained between the two station pumps in use.

General view of the type of pumping station built by the Shell Pipeline Corp. on its new 10-inch, 300-mile, trunk pipe line between McCamey, West Texas, and Healdton, Okla., where it connects with the company's Mid-Continent system. There are 10 stations on the line. A single 1000-barrel working tank, shown at the right of the picture takes care of any overflow from pumping through the main line



Connections between Shell Pipeline Corp.'s main line and station pumps on its new McCamey, Texas, to Healdton, Okla., line

Four strainers are installed in the strainer pit at each station, so arranged that the stream can be cut out for cleaning purposes and back again without shutting down the line.

THE 10 Texas and south Oklahoma stations, between McCamey and Healdton, are located as follows:

Upton county, west corner, sec. 7, block R, GC&SF survey;

Upton county, center of east boundary, sec. 18, block B. CCSD&RGNG survey;

Glasscock county, north half of northeast of southeast, sec. 20, block 54, township 4 south, Texas & Pacific survey;

Mitchell county, west half of northwest of sec. 25, block 29, township 1 south, Texas & Pacific survey;

Scurry county, southeast of southeast of sec. 154, block 3, H&TC survey;

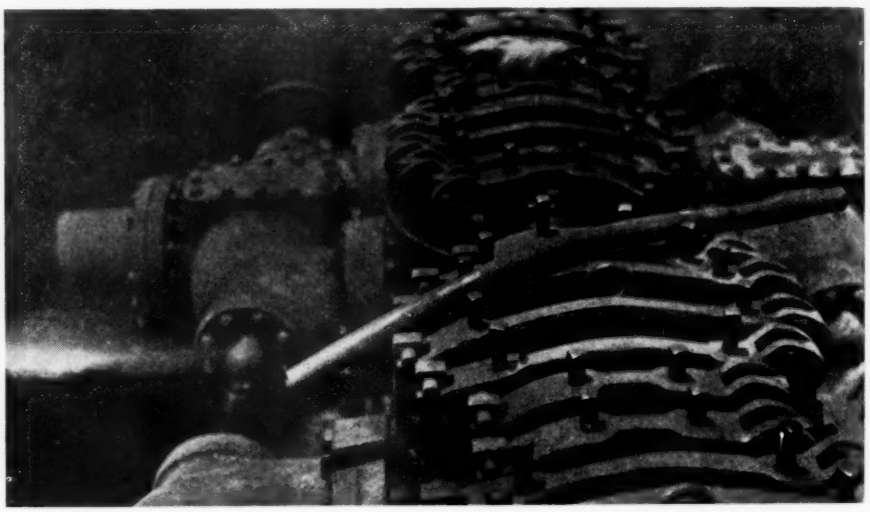
Stonewall county, southwest of northwest of sec. 7, Austin & Williams block 348;

Haskell county, south half of southeast of southeast of sec. 93, J. T. Roberts survey;

Baylor county, southwest quarter of sec. 22, T&NO survey;

Archer county, southeast corner, sec, 16, H&TC block 1;

Jefferson county, Okla., southwest quarter, sec. 24-6s-8w.



View in the strainer pit at one of the Shell Pipeline Corp.'s new pumping stations

111 Days to Drill Into Wilcox at 6000 Feet, in Lovell Field

TULSA, Aug. 25

THE Olympic games are not the only places where records for speed are being broken.

The drilling crew on the Sinclair Oil & Gas Co. No. 1-A Weber, in the Lovell field of northwestern Logan county, Okla. set a record for fast drilling in that field.

The well, in the SE of Sec. 18-19N-4W, started drilling out of the surface pipe April 5, and was drilled into production in the Wilcox sand 111 days later, on July 25. About ten months had been the time spent drilling most of the earlier wells.

The contractors, Loffland Bros., say that nothing out of the ordinary was used in the way of equipment, nor were any new practices tried out which might have helped to increase the amount of hole made each day. It was simply a case of "keeping her on bottom" and keeping her "rotatin'." And rotate she did, for 4833 feet in 63 days is quite a lot of hole in any man's country.

The 111 days it took to drill the well includes the time required for the cement to set and to standardize. Cable tools were used to complete the well from the 8-inch casing point at 4833 feet. The 6-inch was set at 5810 feet and the Wilcox sand was found at 6060 feet.

Of course, one great advantage the drillers had on this well over other and more exploratory wells in the field was the fact that they knew pretty well where the formations were and what to expect in the way of trouble.

The earlier wells had spent a great deal of time in coring and had shut down time and again to allow the rockhounds and paleontologists to determine just what formation they were drilling. While the technicians may have been responsible for slowing up the drilling time considerably, it is to them that the credit for the discovery of the field belongs. It was their insistance that the Wilcox had not yet been penetrated that decided the Roxana Petroleum Corp., which drilled the discovery well, to carry the hole on down.

Although no special equipment was used on the hole, a big derrick, 123 feet high, enabled the rotary crews to pull "fourbles," which helped to increase the speed at which the trips in and out of the hole could be made. Sixty-one sets of cores were used by the rotary in making its part of the hole.

Natural Gasoline Association Adopts Reid Vapor Pressure Test

TULSA, Aug. 27

ADOPTION of the Reid vapor pressure testing method as a tentative standard by the Natural Gasoline Association of America has been announced by A. V. Bourque, secretary. The new method will become effective Sept. 1.

In connection with the adoption of the new method, Mr. Bourque issued a statement which gives the reasons for its adoption, the report of the association's technical committee, which studied all proposed methods, and a description of the apparatus and methods of procedure.

The association stresses the point that Reid vapor pressure values cannot be substituted for present Interstate Commerce Commission vapor tension values. The organization has not recommended transportation vapor tension limits on the new basis but believes that enough information is available to fix satisfactory limits.

Following is the association's statement:

"The Natural Gasoline Association of America has considered for some time the adoption of a satisfactory vapor pressure testing method for the products of the natural gasoline industry. Everyone is aware of the fact that the present I. C. C. method is far from being satisfactory, when one considers its use for specification purposes.

"The technical committee of the association and several of its members have been investigating for several months the various vapor pressure testing methods which have been proposed by different people. After a thorough investigation and a careful consideration of all proposed methods, the technical committee concluded that the Reid and the Beistle-Prather were the two outstanding methods.

"Accordingly, the technical committee recommended the consideration of these two methods to the board of directors of the Natural Gasoline Association of America. The report of the committee in this connection is included later in this article. The board of directors decided to adopt the Reid method, noting the following advantages of the Reid method over the Beistle-Prather method:

"1. It is less liable to breakage on account of the absence of gauge glasses.

"2. It is less liable of leakage for the following reasons:

"(a) Pressure during test is always above atmospheric regardless of the volatility of the sample being tested. Leaks under vacuum are difficult to detect.

"(b) There are fewer connections.

"3. Calculations involved for vapor pressure determinations with the Reid method are more simple than those encountered with the use of the Beistle-Prather method and apparatus.

"4. Determinations are made in a shorter length of time.

"5. The apparatus costs less because it is more easily and more readily constructed and repaired.

"6. Vapor pressure determinations can be made on material with a vapor pressure less than one atmosphere without the use of a vacuum gauge or a compound gauge.

"7. Avoids particular manipulative difficulties attendant to the Beistle-Prather in tests of gasoline having a vapor pressure less than one atmosphere.

"8. It is more easily manipulated and, therefore, better adapted for everyday use at loading racks.

"The board of directors having adopted the Reid vapor pressure testing method the technical committee tentatively standardized the apparatus and method of procedure. The tentative standard is also included in this article.

"The association wishes to stress the point that the primary purpose of standardizing a vapor pressure method at this time is to provide another and rational means of establishing the true value of natural gasoline. It should be borne in mind that Reid vapor pressure values can not be substituted for the present I. C. C. vapor tension values. The association is not prepared at this time to definitely recommend transportation vapor pressure limits on the new basis but feels that sufficient information is available for establishing satisfactory limits.

II. Report of Technical Committee

1. *Engler Distillation Characteristics*

"Many parties had suggested that the Engler distillation could be used to indicate the vapor pressure of natural gasoline. For this reason the first matter considered was this possibility. The following conclusions were reached:

"1. It would be inadvisable to base vapor pressure requirements on Engler distillation characteristics as expressed by the standard grades of natural gasoline. This is because our standard grades are susceptible of change. Perhaps the most far-reaching change in grades in the past was changing the temperature of the receiving cylinder bath from 60 to 32 degrees F.

"2. The Engler initial boiling point is a fairly reliable indication of the vapor pressure in the case of gasolines of similar bases. However, the use of the Engler initial boiling point is too greatly complicated by room temperatures, variations in composition of gasoline, personal factors, etc., to be a reliable guide to vapor pressures.

"Members of the committee had conducted tests which comprised weathering a given gasoline and thus establishing good relationships between Engler initial boiling point and vapor pressures by the various methods. It has even been possible to establish definite relationships between the Engler initial boiling point and the existing I. C. C. vapor tension values in many such limited experiments. In practice, however, serious discrepancies are invariably encountered.

"Attention was called to the facts that room temperature corrections would always have to be used; barometric and altitude corrections would be extremely complicated; and specifications concerning the matter of determining Engler initial boiling points would have to be much more carefully written than they are. The committee feels that even with all these complications provided for, the Engler initial boiling point would still be an unsatisfactory indication of vapor pressure. The committee is aware of the fact that very satisfactory relations between vapor pressure and initial boiling points have been observed when the initial boiling point was obtained by placing the thermometer in the boiling liquid. This relation holds very well for the ordinary grades of motor fuel but is not very satisfactory for the more volatile grades of natural gasoline.

"3. The Engler distillation loss is a fairly reliable indication of the vapor pressure, particularly in the case of gasolines of similar bases. The Engler distillation loss is not subject to personal error to a great extent, room temperature does not materially affect it, and the method of determining it is very carefully specified. Barometric pressure affects it pronouncedly. The biggest factor against the use of Engler distillation loss is the fact that radically different natural gasolines have the same Engler distillation loss.

"Attention is called to Fig. 24, p. 127, of the December, 1927, A. P. I.

proceedings where the following ranges in 'true' vapor pressure are noted for gasolines having given Engler distillation losses.

Engler Distillation Loss (%)	"True" Vapor Pressure Range Lbs. / Sq. In. Gauge @ 90° F.
5	4.5 to 11.5
10	9.0 to 15.5
15	11.5 to 18.5
20	14.0 to 21.5
25	17.0 to 24.5

"These discrepancies are believed to be due entirely to the innate differences in the gasolines tested. Because they exist the committee concludes Engler distillation loss can not be used as a vapor pressure specification.

"4. The greatest possibility in regard to the use of the Engler distillation as an index of vapor pressure of natural gasoline lies in a correlation of intermediate boiling points, distillation loss and perhaps gravity. This would require considerable further work and should be given serious consideration. The committee feels that this use of the Engler distillation can eventually be made as acceptable as any other means of determining vapor pressure. This fact should be kept in mind in any recommendations in regard to vapor pressure methods.

"Since it is evident to the committee that this correlation will require considerable time and thousands of experiments, it is believed an improved vapor pressure method should be adopted at this time. Attention is called to the fact that the adoption of an improved vapor pressure method will permit the desired correlation in the ordinary progress of business.

2. *Vapor Pressure Methods*

"(a) The expression 'true' vapor pressure has been used in this report. The committee wishes to make it a matter of record that its conception of the 'true' vapor pressure of natural gasoline is a reasonable approximation of the vapor pressure of the natural gasoline itself so determined as to eliminate the effects of vapor pressure exerted by foreign air, dissolved air, nonhydrocarbon gases and as small a percentage of the fixed hydrocarbon gases as is consistent with commercial application. One definition that has been used for 'true' vapor pressure of natural gasoline is the vapor pressure of the gasoline calculated from its composition analysis assuming that the 'propane and lighter' in the natural gasoline is all propane.

"(b) To state that the present I. C. C. vapor tension method yields results which frequently cannot be duplicated is only to reiterate what all previous committees have stated. All parties interested are in accord in this respect.

"(c) As far as indicating the 'true' vapor pressure of the gasoline, the present I. C. C. method is of no value.

"Reference is made to Figs. 3 and 4, p. 108 and 109, of the December, 1927, A. P. I. proceedings, where vapor tension values by the present I. C. C. method are plotted against 'true' vapor pressures. The extremely erratic nature of these values when compared with 'true' vapor pressures is self-evident. The following table shows the ranges in comparative vapor tensions noted in these plots:

Temperature (° F.)	Present I. C. C. Vapor Tension (Lbs. / Sq. In. Gauge)	Range in 'True' Vapor Tension (Lbs. / Sq. In. Gauge)
90	10	4.5 to 11.0
	15	6.5 to 17.0
	20	8.5 to 30.5
100	10	0.0 to 8.5
	15	8.0 to 17.5
	20	13.0 to 25.5

"(d) So far as the committee is aware, the present I. C. C. method has served very satisfactorily as far as transportation hazard is concerned. Consequently, from a safety viewpoint there is comparatively little need of change under existing marketing conditions since relatively stable natural gasolines are customarily shipped.

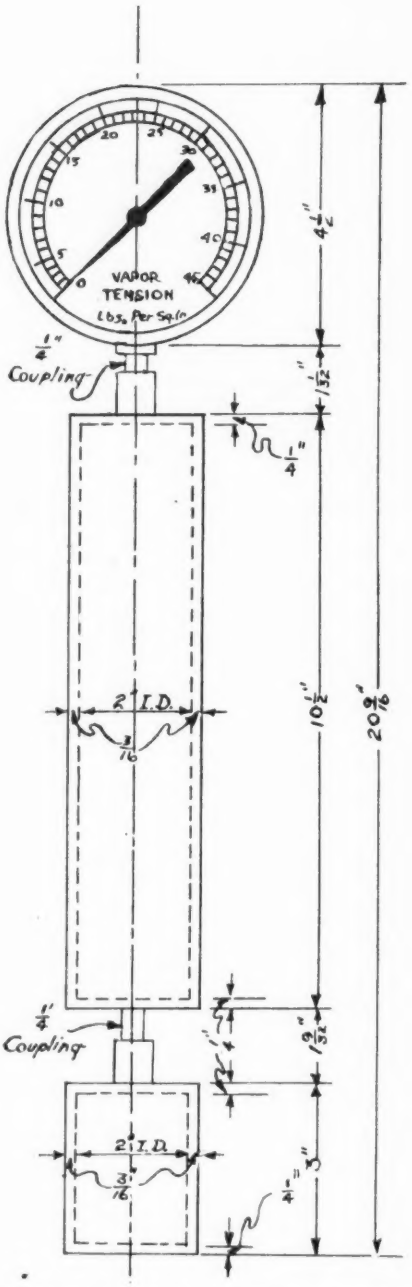
"(e) Other vapor pressure methods are being considered because the industry feels that a better vapor pressure method will be of advantage in the transportation and marketing of natural gasoline. The committee feels that the industry should not use any testing method which is admittedly inaccurate. The committee also feels that the adoption of an exact vapor pressure method will serve to better define natural gasoline and thus extend markets.

"(f) Many vapor pressure methods have been proposed. From the data at hand, the committee has concluded that the Beistle-Prather and Reid methods are the only ones of those proposed which are practicable and which yield results reasonably approximating true vapor pressures.

"Attention is called to Fig. 13, p. 118, and Fig. 15, p. 120, of the December, 1927, A. P. I. proceedings in which Reid and Beistle-Prather vapor pressure values are compared with 'true' vapor pressure values. A very close agreement is noted. The Reid vapor pressure values are slightly lower than 'true' vapor pressures while the Beistle-Prather vapor pressure values are slightly higher than 'true' vapor pressure values. Both methods when applied to pure liquids yield results which approximate accepted vapor pressure data for those liquids.

"Having reached the conclusion that the Beistle-Prather and Reid vapor pressure methods yield results which closely approximate 'true' vapor pressures, a large number of data become available for comparing Engler distillation characteristics and the present I. C. C. vapor tension values with 'true' vapor pressure values. For example, in considering distillation loss as an index of 'true' vapor pressure it was thus ascertained that natural gasoline having a distillation loss of 11 per cent could have 'true' vapor pressures as high as 18 pounds per square inch gauge at 90 degrees F. and 23 pounds per square inch gauge at 100 degrees F. Such data serve to materially increase the ranges of 'true' vapor pressures noted in the two tables previously presented and further emphasize the conclusions made in regard to them.

"(g) Comparing the Beistle-Prather vapor pressure method with the Reid vapor pressure method, the former gives more information regarding the samples tested than the latter. For example, the Beistle-Prather method gives some information as to the quantity and quality of the foreign and fixed gases and consequently af-



Apparatus for carrying out Reid vapor pressure test, adopted by the Natural Gasoline Association of America, effective Sept. 1, 1928

fords some indication as to the 'actual' vapor pressure of the gasoline with all its contaminants. Data from Beistle-Prather vapor pressure tests, in the hands of a person capable of interpreting them, might prove valuable. The only information obtainable from the Reid vapor pressure tests is the 'true' vapor pressure. The Beistle-Prather method is more complicated in its manipulation, a single test takes more time, the apparatus is more costly, and there is a slightly greater chance for leaks than is the case with the Reid apparatus.

"(h) Both the Beistle-Prather and Reid vapor pressure methods would be comparatively easy to put into practice.

"(i) Because of its greater simplicity, the committee believes the Reid method would be a more reliable test in the hands of loading-rack men than the Beistle-Prather method.

"(j) It is recommended by the committee that either the Reid or the Beistle-Prather method be adopted by the N. G. A. A. as the method for determining the vapor pressure of natural gasoline. The committee prefers the Reid method, but feels that the Beistle-Prather method would be a very satisfactory alternative.

"(k) The temperature of the bath should be the same throughout the year. The temperature recommended by the committee is 90 degrees F. Vapor pressures for any other temperatures can be calculated with a reasonable degree of accuracy from the 90 degrees F. value."

III Apparatus

The apparatus and method of procedure is essentially the same as proposed by Walter Reid, which apparatus consists of a bomb, a pressure gauge and a water bath.

(a) The Bomb

The bomb consists of two parts. The first, which is the air bomb, is made of a piece of 2-inch standard line pipe 10 inches long, with welded ends having a ¼-inch collar welded in the center of one end, and a ¼-inch nipple 1 inch long welded in the center of the other end. This bomb MUST drain completely from either end when held in a vertical position.

The second part, the gasoline bomb, consists of a piece of 2-inch standard line pipe 2½ inches long with welded ends having a ¼-inch collar welded in the center of one end, the other end being completely closed.

This apparatus is shown in the figure.

(b) Pressure Gauge

The pressure gauge shall be an approved make of vapor tension or test gauge, with a diameter of 3 or 4½ inches, and scaled for 30 or 45 pounds pressure. Gauges shall be checked frequently and adjusted if found to be in error.

(c) Water Bath

The water bath shall be of such dimensions that the bomb may be immersed to the bottom of the pressure gauge. Means for maintaining a constant bath temperature of 90 degrees F. should be provided.

Procedure

(a) Purging the Air Bomb

Prior to each test the air bomb must be thoroughly purged of any gasoline or gasoline vapors that may remain from a previous test. This is best accomplished by filling the air bomb, from which the gauge has been removed, with hot water, then allowing the bomb to drain. This procedure should be repeated several times. The air bomb is then suspended in the shade on a rack in a vertical position. The bomb should remain on the rack for at least one hour.

Where a large number of determinations are to be made, several air bombs should be provided for each gasoline bomb.

Just prior to the test the pressure gauge is screwed tightly into the air bomb using a little shellac or powdered lead on the threads of the gauge to make a tight connection.

(b) Filling the Gasoline Bomb

Before each test the gasoline bomb is rinsed with water. This water is poured out and the bomb allowed to drain for one minute.

The bomb is immersed in a tank of the material to be tested and allowed to fill while being raised and lowered through the liquid. This liquid is used to thoroughly wash the bomb and is then emptied. The bomb is refilled in the same manner, care being taken to see that it is completely full of the liquid. The sample is now ready for the test.

Should it be necessary to transfer the sample to the bomb by means of pouring, both the liquid and the bomb must be cold enough so that no appreciable change in composition of the liquid occurs during the operation. The bomb shall be completely full of the liquid when the test is run. Table I gives the temperatures at which gasolines of several vapor pressures should be held when pouring.

Table I.

Temperature to Which Gasolines Should be Cooled Before Pouring

Vapor Pressure @ 90° F. Lbs. per Sq. In. Abs.	Temperature of Sample When Pouring
9 or under	32 —40° F.
9 — 12	15 —20° F.
12 — 16	10 —15° F.

(c) Conducting Test

The temperature of the air in the air bomb is recorded. The air bomb with the gauge in place is then immediately attached tightly to the gasoline bomb. The apparatus is turned upside down several times to allow gasoline to run into the air chamber. It is then immersed in a water bath held constant at 90 degrees F. At the end of 5 minutes the bomb is removed from the bath, inverted several times and shaken vigorously. It is then replaced in the bath, and as soon is the gauge reading becomes constant, the pressure is recorded. This will usually require from 5 to 10 minutes.

(d) Calculating Results

In order to calculate the vapor pressure of the gasoline, the final pressure recorded above must be corrected for the change in the pressure of the air in the bomb due to change in temperature. This is done by adding to or subtracting from the observed pressure the correction given in Table II, opposite the air bomb temperature. Since the pressure of the air in the air bomb was zero pounds gauge when attached to the gasoline bomb, any pressure shown on the gauge at the end of the test must have been due to the pressure of the gasoline vapors and the change in the air pressure. For this reason, the gauge pressure when corrected for the change of the air pressure is the vapor pressure of the gasoline in pounds per square inch absolute.

For example, the observed gauge pressure is 15.0 pounds per square inch and the air bomb temperature is 76 degrees F. Reference to Table II will show the correction for this air bomb temperature to be 0.4 pounds per square inch. Subtracting this correction from the observed gauge pressure of 15.0 pounds will give 14.6 pounds per square inch absolute as the vapor pressure of the gasoline.

Table II

Correction Factors for Expansion of Air

(*Barometric Pressure* 14.4 *Pounds*)

Air Bomb Temp. °F.	Correction	Air Bomb Temp. °F.	Correction
30	Subtract 1.8	72	Subtract 0.5
32	1.7	74	0.4
34	1.6	76	0.4
36	1.6	78	0.3
38	1.5	80	0.3
40	1.4	98	0.2
42	1.4	100	0.2
44	1.3	102	0.1
46	1.3	104	0.1
48	1.2	106	0.0
50	1.1	108	Add 0.1
52	1.1	110	0.1
54	1.0		0.2
56	1.0	82	0.2
	0.9	84	0.3
60	0.8	86	0.3
62	0.8	88	0.4
64	0.7	90	0.4
66	0.7	92	0.5
68	0.6	94	0.5
70	0.5	96	

Figures given in table to be subtracted from or added to the observed reading to give vapor pressure of gasoline in pounds per square inch absolute at 90 degrees F.

The above values were calculated from the formula:

$$\text{Increase in air pressure} = \frac{\text{Barometric pressure} \times (90 - \text{Air Bomb Temp.})}{460 + \text{air bomb temperature}}$$

World's Deepest Oil Test Put Down to 8234 Feet in Texas

HOUSTON, Aug. 23

THE world's deepest oil test—the B-1 University of the Texon-Group 1 companies, in Reagan county—looks no different from any of the 220 producing wells completed in the Big Lake field.

A casual visitor driving through the field without making inquiry would pass it by as having no extraordinary interest or significance. The derrick is of usual steel construction, the electrical transformer is identical with others used for drilling wells and, generally speaking, there is nothing about the rig to distinguish it from less interesting holes.

The test, which is now 8234 feet deep, will be started up again when the electric motors used in drilling it have been rewound. They were damaged last May in a fire that destroyed the floor of the rig. Since that time the test has been shut down.

It will be necessary also to remove a bailer that was lost in the hole at the time of the fire before drilling can proceed.

About 2000 feet of oil, which occasionally accumulates enough pressure to make a head of roundly 100 barrels, is being carried in the hole in the Texon-Group 1 test. It comes from about 6375 feet, where "sweet" crude testing 41.5 degrees, A.P.I. gravity, was found in small quantity.

It was originally believed the deep oil found in the well came from the sub-surface contact of the Permian and Pennsylvanian beds, but this is discounted by Dr. E. H. Sellards of the Texas Bureau of Economic Geology at Austin after an examination of drill cuttings.

"An unusual thickness of black petroliferous shale and limes was revealed in our study," said Dr. Sellards. "In this deep well of more than 8000 feet, sediments passed through included several different formations. At the surface, to a depth of 300 or 400 feet are found limestones and sandstones of Cretaceous age. Underneath these, for a few hundred feet, the rocks are red sandstones of Triassic age. Below this are the Permian formations. The uppermost Permian is constituted largely of red sands, salt, gypsum and anhydrite.

Frank T. Pickrell, vice president and general manager Texon-Group 1 Companies

"The salt beds in this part of the section reach a thickness of 300 to 600 feet and contain more or less potash. Underneath the salt and anhydrite, beginning at a depth of approximately 3000 feet, are found limestone and dolomite from 800 to 1000 feet in thickness, underneath which are the great shale and limestone series in which the well terminates."

Notwithstanding its great depth, Dr. Sellards is quoted as saying the test affords no evidence of having passed below the Permian formations.

THE test has cost approximately $100,000 to put down to its present depth, but oil from the normal producing horizon in the Big Lake field (2800-2900 feet) was of sufficient quantity to more than pay for the deepening of the well.

A 5-inch cable tool hole was carried down to present depth in the B-1. Equipment generally has been extra heavy and the Texon-Group 1 companies are using 10,000 feet of drilling line tapering from 1-inch to ⅞-inch in the hole.

Frank T. Pickrell, vice president and general manager of the Texon-Group 1 companies, says he is not content with passing the record established for the deepest rotary well, drilled by the Chanslor-Canfield Midway Oil Co. in the Olinda field of California to 8201 feet. Mr. Pickrell says he will not be satisfied until he has drilled to a maximum depth or found commercial oil.

The Olinda well, No. 96 in the field of the same name, was finished with 2-inch drill pipe below 8046 feet.

An accompanying table gives depths and locations of other test wells that made history in deep drilling.

(The table of wells drilled below 7000 feet carried with this article does not include late deep tests drilled in California. The Associated Oil Co. has a well in the Ventura Avenue field at a total depth of 7959 feet, which produced for a little time, and has recently been killed because of water entering the hole. In a few other cases, in the past few months, wells have been drilled in California below 7000 feet.—Editor's Note).

Record of Wells in U. S. Drilled Below 7000 Feet

Company—Well	Location	Depth (Feet)	Condition
Texon-Group 1 Companies. University B-1	Reagan Co., Texas	8,234	Standing
Chanslor-Canfield Midway Oil Co. Olinda 96	Orange Co., Calif.	8,201	Dry
Peoples Natural Gas Co. Ligonier 1842	Near Pittsburgh, Pa.	7,756	Gas at 7440'
Miley Oil Co. Athens 6	Los Angeles Co., Calif.	7,591	Oil pay
Hope Natural Gas Co. I. H. Lake	Marion Co., W. Va.	7,579	Dry
Goff	Harrison Co., W. Va.	7,386	Tools lost
Peoples Natural Gas Co. Geary 770	Washington Co., Pa.	7,248	Tools lost

New Rainbow Gasoline Plant is Completed

TULSA, Aug. 27.—The Rainbow Gasoline Corp. has completed its new gasoline plant in the Champagnolle field of Arkansas and is now operating on a satisfactory basis. The plant is a 5-unit absorption plant located on the Gregory farm in Sec. 10-17S-14W, 12 miles east of El Dorado. The plant expects to be handling about 10,000,000 cubic feet of gas per day shortly.

The company is a new corporation organized by the Henderson Gasoline Co. and the Root Refineries, Inc., to take over gas contracts owned by the two organizations and eliminate duplication of plant and gathering facilities.

Operations will be directed by the Henderson company through that company's offices in Tulsa. Officers of the company are D. P. Hamilton and D. S. Brooks representing the Root interests and F. C. Henderson and F. C. Hall representing the Henderson interests.

The Editors' Viewpoint

National Petroleum News

Helping Employees Own Their Homes

OIL corporations, no less than other industrial enterprises, find that business principles applied to helping their employees result in mutual gains.

Magnolia Petroleum Co., subsidiary of Standard Oil Co. of New York, operates a building and loan association for employees at its Dallas headquarters. Its affairs are handled on a strictly business basis, without paternalism but with a keen regard for the welfare of its members.

A notice recently issued by the association gives an idea of how it makes an effort to serve the best interest of employees:

"If you have carried a second lien on your home, in addition to a first lien carried by this association, we will be pleased to have you make inquiry about consolidating these liens through the association, providing the total liens do not exceed two-thirds of the appraised valuation of the property. If the property is situated in a small city or town we do not loan in excess of 50 per cent of the appraised value of property."—P. W.

High Land Values Close Stations

SERVICE stations are closing here and there over the country. The addresses of four service stations in Chicago, now locked and darkened, might be provided on request. They were never owned by a large company or they might have been carried longer. They opened in the immediate expectation of business that did not come and as a result they closed.

Two years ago the writer observed a locked service station and remarked about it to L. V. Nicholas, then president of the National Petroleum Marketers association. Mr. Nicholas replied by offering to drive any distance within 100 miles to see if it had been closed for economic reasons. Investigation proved that it had been closed by injunction, having nothing to do with the prosperity of the enterprise itself.

But most of the good locations have been taken now. It is not as easy to slap up a filling station and make a profit as it used to be. Gallonage per station has been getting smaller for several years and now margins are getting narrower—so narrow in some cases that profits are completely wiped out.

An executive of a large company said recently that he had wrecked and abandoned a filling station within the last year, having no fear that some competitor might rebuild on the same lot. And one of the largest Independent jobbers with headquarters in Chicago recently said this:

"I have a station that does a wonderful gallonage. But I am going to salvage the equipment, and sell the lot." And in answer to the inevitable "why" he said:

"We do business on high-priced locations. We are obliged to. Consequently we are in the real estate business in a sense. And our real estate expert tells us we can't afford to keep the lot with a service station on it.

"Last month it paid its own way; paid the help, insurance and overhead, but it did not pay the interest on the $45,000 the lot is worth. The company owns the lot and it is not likely to depreciate in value but it will appreciate just as rapidly or hold its own just as surely if used for something else. So we have a $45,000 investment that is not paying a legal rate of interest. —W. K. H.

Why Change From Pounds to Quarts?

OIL companies that operate greasing stations, grease manufacturing and distributing companies and makers of equipment for dispensing grease in measured amounts should concern themselves with the new proposed specifications for mechanically operated grease dispensing devices.

These specifications were proposed by the National Conference on Weights and Measures which met last spring in Washington. Those attending and taking part were state and local officials having to do with inspection of measuring devices of all kinds.

The new specifications relating to grease pumps provide that grease shall be sold through equipment of this type only in pints, quarts and so on.

This means a change from the present method of handling and selling grease by weight to selling it by volume, as liquid oils are dispensed.

Representatives of oil companies and companies making grease dispensing devices, as far as is known, had no part in drawing these specifications, which are now tentative. They stand for a year subject to criticism and discussion. If they are then finally adopted by the Conference on Weights and Measures, they become a model for state and city regulations and are recommended by the United States Bureau of Standards for adoption by states.

The arguments which were advanced at this conference in favor of changing from the weight to the volume unit of measurement for grease were not made public. Probably one of the chief reasons for this change was that crank case and differential capacities on motor cars are usually given in volume units.

Those directly interested in this change should give their attention now to whether this fact and other arguments that can be brought to bear in favor of this change outweigh the expense to which the oil companies and equipment manufacturers will be put in doing away with present equipment which will not meet these specifications.

It seems hard to figure out where the interests of the public would be greatly benefitted by the change. The selling of grease to the public is mostly a servicing charge and a few ounces either way in the amount of grease actually used wouldn't make a bit of difference in the quality of the job, or the price paid for it.

There is also this point to consider. Grease is sold in cans by the oil companies entirely by weight. Under the new specifications the conference proposes the industry will either have two systems for handling and selling its grease products, or the alternative of changing its can sizes, lithograph dies and so on to conform to the volume system.—V. B. G.

Review of Late Production News

CRUDE oil production east of the Rockies increased again for the week ending Aug. 25—by about 38,000 barrels, daily average gross, as compared with an increase of about 57,000 barrels a week ago.

A moderate decline in output in California brought the increase for the entire country down to about 33,000 barrels. Total production for the week stands at 2,477,450 barrels, according to the American Petroleum Institute figures.

Foreign crude brought into this country, 205,428 barrels daily average for the week, 41,000 barrels less than the week before.

So total crude supply for the country, 2,682,878 barrels, daily average, was better than 8000 barrels less than the total figure for the week before.

Oklahoma production increased 37,600 barrels daily average for the week. There was a gain of 13,000 barrels in the St. Louis pool, 22,000 barrels in Little River and about 8000 barrels in Earlsboro. Older districts showed nominal declines.

Prorated areas in West Texas dropped 9000 barrels. Salt Creek was responsible for a gain of 6600 barrels in Wyoming. Various fields contributed to a decline of 5000 barrels in California.

Oklahoma-Kansas

THERE is great interest on the part of operators in the plan to restrict production throughout Oklahoma to market needs. Operators have proposed a general method to the state corporation commission, on which the commission will have a hearing in Tulsa Sept. 6.

By this plan the market for crude would be set up for a 30-day period. The normal output of all fields where the average per well per day output is under 100 barrels would be taken. The difference between this supply and market demand would be the amount the flush pools would be called on to supply. All flush fields would be called upon for the same proportion of their total potential output.

Two sides of the Little River extension in the Seminole district of Oklahoma appear to have been partially defined by recent completions. The southeastern corner appears to be the northeast corner of Sec. 23-7-6, in which the Carter Oil Co. and Pure Oil Co. both completed failures in the Wilcox sand. The western limit was defined last week by dry holes on the eastern edge of Sec. 15-7-6.

The Prairie Oil & Gas Co. No. 1 Gammon, in the NW SW NW of Sec. 30-7-5 extended the producing area in the Wilcox sand territory of the St. Louis pool south and west. A dry hole in the NE SW of 19-7-5, offsetting the discovery well in the Wilcox sand, put a limit to the northwestern edge of the field.

California

PLANS are already being discussed by engineers and operators active in Santa Fe Springs for cooperative development methods which will prevent the loss of excess gas which it is believed will be produced with the oil there.

It is considered practical to pump excess gas into the old Meyer zone, above the present new producing structure, to serve the double purpose of repressuring that partially depleted sand and conserving gas that would otherwise be lost.

As of Aug. 25 there were a total of 144 operations in Santa Fe Springs brought about by the discovery a month ago of a new light oil sand just above 6000 feet in this old field. In addition there were about 50 tentative locations. Within a week there will probably be 100 wells already drilling to reach this new sand.

There were 17 completions at Long Beach last week, but with an average initial per well of only 650 barrels, the net result being a decline in production for the field because of decline in output of older wells.

The new well of the Associated Oil Co. in the new Potrero field, just outside Los Angeles city limits, picked up the oil sand about 600 feet higher than the discovery well, several hundred feet to the southeast. This indicates that town lots in the southeast corner of Inglewood limits may be productive.

Texas, New Mexico, Louisiana

OPENING of deep lime wells in the Roberts-Settles area of Howard and Glasscock counties, Texas, has been further delayed until gaging for prorating purposes has been completed. Under rules adopted by the operators advisory committee, each well owner must be notified 48 hours in advance of gaging so as to permit reconditioning work on wells previously shut in. The resulting delay has postponed from Aug. 15 to Sept. 1, at least, limiting daily production to 15,000 barrels the first month and 25,000 barrels, thereafter, for five months.

Winkler county production continues prorated at 175,000 barrels daily maximum, comparing with 72,500 barrels in the Yates field, Pecos county. Gulf Pipeline Co. began running its own Yates field oil, Aug. 20, whereupon the railroad commission allowed an increase of outlet from 65,000 barrels, permitting the Illinois, Humble and Roxana interests to maintain their usual runs.

After deepening 12 feet to 4112 feet, the Midwest Refining Co.'s No. 1 state, in 9-19S-38E, Lea county, New Mexico, gaged 250 barrels in 19 hours. It had been shut down 21 days while two 5000-barrel tanks were built. Empire Gas & Fuel Co.'s No. 1 state, in 8-21S-35E, is now pumping about 90 barrels of oil and larger quantities of water daily at a total depth of 3837 feet.

Wyoming, Montana

A NEW light oil producing area may be opened up in Wyoming, 15 miles southeast of Riverton, by a well of The Texas Production Co. making 800 barrels in the top of the Dakota formation at 3983 feet, in the SW SW 1-33-95.

The Producers & Refiners Corp. has 8,000,000 feet of gas in the Muskrat structure, in Sec. 34-34-92.

E. H. Rosenberg is completing a well in the top of the Embar at 2585 feet in the Frannie structure, Sec. 25-58-98.

A movement is on foot among operators in the Oregon Basin field in northern Wyoming to shut down all drilling rigs, not produce any of the wells in the southern structure and to produce only enough in the northern structure to meet contract requirements.

Important Hearings Begin Sept. 12 In Western Oil Rate Cases

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, Aug. 27

THE first of a series of important hearings on many petroleum freight rates west of the Mississippi river will be held Sept. 12 at Kansas City, Mo. This hearing will be concerned with rates into western Nebraska. Hearing concerning rates into South Dakota will be held Sept. 26 at Chicago. Later hearings concerned with all light oil rates in the Southwest will be held.

Although the Nebraska case is principally a reopening of the A. B. A. Independent Oil Co. et al. case, which was decided March 15, 1928, the issues at the new hearing will be made much broader as a result of a complaint filed by the White Eagle Oil & Refining Co. This company seeks to open a new gateway into western Nebraska through Superior, Neb., cutting down the haul to most Nebraska points by about 116 miles. The tariff route to most western Nebraska points now is via Kansas City from Mid-Continent refining centers.

In I. C. C. Docket No. 18,335, which was decided by the commission on July 23, 1927, the White Eagle obtained rates to several Nebraska points on the St. Francis branch of the C. B. & Q. from El Dorado and Augusta, Kans., on the basis of the actual haul over Santa Fe and Burlington lines, eliminating the long haul to Kansas City and back.

The new complaint, which is to be heard with the re-opened A. B. A. Independent Oil & Gasoline Co. case, Docket No. 14,953, and the Manhattan Oil Co. case, Docket No. 17,001, has for its object the opening of the Superior gateway as a traffic route for shipments from all points of origin in Kansas, Kansas City, Mo., Oklahoma and north Texas. The opening of the gateway would reduce the mileage on most shipments to western Nebraska to a point which would justify lower rates in the opinion of the shippers.

Refiners object seriously to the rates to western Nebraska points which were fixed by the commission in the A. B. A. Independent Oil & Gasoline Co. case. They point out they were arrived at on an entirely new basis which the shippers feel to be a dangerous precedent.

The commission in this case fixed the oil rates at about 25 per cent of the first class rates in the area, setting up a scale running from 21 cents per hundred for a haul of 100 to 110 miles to a rate of 52 cents per hundred for a haul of 660 to 700 miles. The new rates were based partly on the rates to the few Nebraska points obtained by the White Eagle in its first case which partly opened the Superior gateway.

The Nebraska hearing will bring a large number of shippers to Kansas City. Thus far several important refining companies have intervened, including the Standard Oil Co. of Indiana, Roxana Petroleum Corp., Skelly Oil Co., and the Transcontinental Oil Co. Others are expected to intervene when the hearing begins.

IN THE South Dakota case the Mid-Continent refiners will battle with the Midwest Refining Co. (Standard of Indiana subsidiary) over comparative rates from Casper and Group 3 to consuming centers in the western part of Indiana territory. The case is the result of a suspension of rates from Wyoming to South Dakota obtained on complaint of 10 important Mid-Continent companies. It is known as I. & S. Docket No. 3148.

In a supplemental decision in the Mid-Continent oil rate case of 1925, handed down March 5, 1928, the commission prescribed maximum rates both from Group 3 and Casper to South Dakota points. The decision reversed previous rate differentials in many cases, giving Group 3 an advantage over Wyoming where Wyoming had had the advantage. For example, Wyoming had a differential of 7.5 cents per hundred under Group 3 to Huron before the decision. The commission gave Group 3 an advantage of 2 cents per hundred over Wyoming in the rates made effective June 14.

Western Trunk Line railroads which carry oil from Wyoming to the Dakotas objected strenuously to the commission's decision since it reduced their rates. One tariff carried a note regarding certain rates which asserted that the carriers thought them to be too low but published the new figures "solely to avoid fines and penalties."

AFTER putting in the lower rates under protest the C. B. & Q. and the C. & N. W. railroads published tariffs reducing rates from Wyoming still further to a point where they would be again under Group 3. The new rates were to have been effective Aug. 15 but on protest of the 10 Mid-Continent refiners were suspended until March 15, 1929, pending investigation. The petition of the Mid-Continent refiners asked for suspension of rates to South Dakota only but the commission also suspended rates to points in North Dakota, Montana, Minnesota, Iowa and Nebraska.

An accompanying table gives comparative rates from Oklahoma and Casper to several South Dakota points both before and after the commission's decision in the 1925 Mid-Continent case and the proposed rates which have been suspended.

No date has been set for hearing of the general investigation of oil rates in Oklahoma, Kansas, Texas, Arkansas and Louisiana as petitioned

Tenth of I. C. C. Business Pertains to Petroleum

WASHINGTON, Aug. 27

THERE are large volumes of figures which show the marvelous growth of the petroleum industry. Most of them, however, are figures which show the industry in comparison with itself. Few show it in comparison with other industries or facts.

Here is what is believed to be an unusual comparison. At this time one-tenth of all the business of the Interstate Commerce Commission pertains to the oil industry. That body each year dockets about 3000 cases consisting of applications to issue securities, to buy more cars and engines, to build new lines, to extend old ones, to abandon line and to have rates changed.

A check of cases made within the week shows that the oil industry has exactly 300 cases on the docket of that body, classified as follows: Rates on petroleum and its products in which those words are used, 96; naphtha, 2; distillate, 3; fuel, illuminating, lubricating, road, gas, mineral seal, 78; wrought or steel pipe, 76; and oil well supplies, 45.

Rates on Refined Oil to South Dakota, Carload from Oklahoma Group 3 versus Casper, Wyoming and Related Points

From:	Okla. Group 3		Casper, Wyoming			Differentials Group 3 over or under Casper				
	Prior to	Effective	Prior to	Effective		Prior to		Effective		
To:	6-14-28	6-14-28	6-14-28	6-14-28	Proposed	6-14-28		6-14-28		Proposed
South Dakota:										
Yankton	53	†41	53.5	53.5	41	.5	under	12.5	under	.....
Mitchell	58.5	†45	53.5	*50	41	5	over	5	"	4 over
Huron	61	†48	53.5	*50	40.5	7.5	"	2	"	7.5 "
Winner	69	†54	61	61	46	8	"	7	"	8 "
Chamberlain	66	†52	53.5	*45	39.5	12.5	"	7	over	12.5 "
Watertown	58.5	†50	53.5	53.5	45	5	"	3.5	under	5 "
Aberdeen	67.5	†55	53.5	53.5	41	14	"	1.5	over	14 "
Murdo	95	†58	51	45	38	44	"	13	"	20 "
Pierre	70.5	†59	53.5	*45	40.5	17	"	14	"	18.5 "
Roscoe	67.5	†59	53.5	53.5	45	14	"	5.5	"	14 "
Midland	92	†63	51	45	38	41	"	18	"	25 "
Mobridge	73.5	†63	59.5	59.5	49	14	"	3.5	"	14 "
Rapid City	91	†68	43.5	*36	36	47.5	"	32	"	32 "
Isabel	90.5	†70	71.5	71.5	50	19	"	1.5	under	20 "
Deadwood	91	†70	47.5	40	40	43.5	"	30	over	30 "
Lemmon	90.5	†70	70	70	49.5	20.5	"	....		20.5 "
Belle Fourche	93	†72	50	*40	40	43	"	32	over	32 "
Faith	99	†75	71.5	71.5	50	28	"	3.5	"	25 "
Redfield	64.5	55	53.5	*50	41	11	"	5	"	14 "
Parker	55.5	45	53.5	53.5	41	2	"	8.5	under	4 "
Scotland	56	45	53.5	53.5	41	2.5	"	8.5	"	4 "
Brookings	58.5	50	53.5	53.5	45	5	"	3.5	"	4 "
Highmore	66	59	53.5	50	40.5	12.5	"	9	over	18.5 "
Arlington	58.5	48	53.5	53.5	45	5	"	5.5	under	3 "
Tyndall	55	52	53.5	53.5	41	1.5	"	1.5	"	11 "
Wakonda	53	41	53.5	53.5	41	.5	under	12.5	"	....

†Key points from Okla. Group 3 in Mid-Continent Oil Rates, 1925, 139 I. C. C. 605.
*Key points from Casper in Mid-Continent Oil Rates, 1925, 139 I. C. C. 605.

by The Texas Co., Magnolia Petroleum Co., and Gulf Refining Co.

The complainants have ammended their petition to exclude low grade oils, crude oil and natural gasolines. Their efforts will be to obtain a readjustment of light oils, lubricating oil, and greases.

One of the chief aims in this case is to obtain a readjustment of intrastate rates in Texas and a leveling up of interstate rates among the five states so that traffic may move freely from one state to the other. At present state lines are a bar to traffic except between Oklahoma and Kansas.

* * *

Additional Complaints Filed

WASHINGTON, Aug. 25.—Nine complaints about rates on petroleum and its products were filed with the Interstate Commerce Commission Aug. 24. Most of these complaints pertained to the rates from the Mid-Continent into South Dakota hearing on which will be held Sept. 26 at Chicago.

In one complaint, that brought by the Brownell Corp., Sioux Falls, and 60 others, it was alleged that the rates from Kansas, Missouri, Arkansas, Oklahoma and Texas are unjust, unreasonable, excessive and unduly prejudicial to Remer, Baltic, Dell Rapids, Trent, Egan and Flandreau, S. D., in comparison with rates to Pipestone, Minn.

Other complaints were filed by the Delmont Oil Co. and two others about rates to Delmont; the Avon Oil Co. and eight others about rates to Scotland, S. D.; Moody County Oil Co. and two others about rates to Flandreau; Norbeck Co. and eight others about rates to Redfield; Community Oil Co. and two others about rates to Brookings and Legel Oil & Gas Co. and seven others about rates to Centerville.

A complaint filed by the Independent Oil Co., about the rates on casinghead gasoline from Groups 2 and 3 in Mid-Continent to Altoona and Portage, Pa.; and one by Moore & Munger, New York, about the rate on wax from Casper, Wyo., to a waxed paper manufacturer at Oakland City, Ga.

Stockholder Sues Doheny For Elk Hills Cost

CLEVELAND, Aug. 28.—E. L. Doheny and the Petroleum Securities Corp., Los Angeles, were sued Aug. 27 at Los Angeles for $11,000,000 alleged to have been lost in the Elk Hills naval petroleum reserve venture of the Pan American Petroleum & Transport Co. The suit was brought by John A. Elden, Cleveland lawyer and Pan American stockholder, and other stockholders in the name of Frank H. Kunkel, Cincinnati, also a stockholder.

Doheny was the head of the Pan American when it obtained a lease on the Elk Hills reserve in California in 1922. The property was later ordered returned to the government on the grounds that the lease has been obtained from former Secretary of th Interior Albert B. Fall through fraud.

The money was spent by Pan American on development of the Elk Hills lease and the building of a fuel oil base for the navy at Pearl Harbor, Hawaii.

Kunkel alleged in his petition that he had tried with no success to have the Pan American directors bring the suit against Doheny and the Petroleum Securities Corp., Doheny's personal investing company. The Doheny and Petroleum Securities stock in Pan American Petroleum & Transport was sold more than two years ago to the Pan American Eastern Petroleum Co., which is controlled by the Standard Oil Co. of Indiana.

Lubrication is Topic For Ohio Meeting

COLUMBUS, O., Aug. 27

Lubrication will be the principal subject at the convention of the Ohio Petroleum Marketers Association Sept. 5, 6 and 7 at the Commodore Perry hotel, Toledo. The complete program, as announced by W. A. Milne, executive secretary, in the August issue of the "Ohio Petroleum Marketer" association bulletin, is:

Address of welcome, William T. Jackson, mayor of Toledo; response, J. L. Marsh, Vahey Oil Co., Youngstown, president of the association.

These speakers are on the program: B. J. Majewski, vice-president, Shaffer Oil & Refining Co., Chicago, on "Follies of 1928;" H. C. Mougey, chief chemist, research laboratories, General Motors Corp., Detroit, "Lubricating an Automobile;" E. W. Upham, chief of the engineering division of Chrysler Motor Corp.; Detroit, will explain the Society of Automotive Engineers viscosity numbers for motor oils. B. F. Connelly, Freedom Oil Works, Akron, will talk on Lubrication Week, he being responsible for the idea of such a week for Ohio marketers.

Dr. Hugh P. Baker, manager trade organization department, Chamber of Commerce of the United States, Washington, "Group Action Upon Industrial Problems." Hubert B. Fuller, Cleveland, attorney for the association, will outline the proposed changes and amendments in the Ohio gasoline law. Col. J. G. Vincent, vice-president, Packard Motor Car Co., Detroit.

R. R. Lanning, Crystal Rock Gas & Oil Co., Logan, on "Know Ohio;" and Grove Patterson, editor and columnist of the Toledo Blade.

The present trend of marketing conditions in Ohio will be discussed late in the afternoon of the second day, with William F. Burke, Kentucky Independent Oil Co., Cincinnati, leading the discussion with "Where Do We Go From Here?" Charles McLean, vice-president of the Canfield Oil Co., Cleveland, and a director of the association, will be another leader in this discussion.

Special entertainment has been provided for visiting ladies, consisting of a visit to the zoological gardens, automobile and boat trips, a bridge party, style show, etc. A banquet will feature the evening of the second day.

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

THE first figures I have ever seen as to how the sale of Ethyl gasoline has progressed during the past few years in the United States, are contained in a report of a British committee which was appointed to investigate the hazard, if any, involved in the marketing of Ethyl gasoline in Great Britain. The report was given out last week.

A. M. Maxwell, vice president and general sales manager of the Ethyl Gasoline Corp. and Graham Edgar, director of research of the same company, were witnesses before the British committee, Mr. Maxwell gave the following figures as representing sales of Ethyl gasoline in the years since it has been on the market:

Year	Gallons
1923	5,000,000
1924	150,000,000
1925	90,000,000
1926	180,000,000
1927	400,000,000
First quarter of 1928	110,000,000

It will be remembered that 1925 was the year in which the Ethyl Gasoline Corp. voluntarily suspended sales of Ethyl gasoline from May until the end of the year, pending the investigation of its health safety by the surgeon general's committee.

* * *

THE classic case of the lazy man with the leaky roof who couldn't fix the leaks when it was raining and who didn't in fair weather because then it wasn't necessary, is reversed in the case of the refiner. He doesn't get away for any long time nowadays without fixing his roof, that is installing new equipment to enable him to take advantage of the latest operating methods known to the art for the purpose of cutting costs.

During the past year or so—especially the last few months, to carry on the parallel of the man with the leaky roof—it has been raining for the refiner. That is, it has been extremely hard to make a profit. Nevertheless, refiners generally saw that better operating methods were a necessity and that whatever profits they made would have to come from reduced costs of manufacturing. So refinery construction went right on, despite the meagerness or total lack of profits.

Now the sky is clearing up. It is good weather for roof-fixing. With profits beginning to show on the balance sheets the refiners will be even more active, doubtless, than they have been during the past few months, in installing needed new and better equipment. Because refiners are not going to be lulled into believing that "everything is going to be all right now," without any further effort on their part to keep abreast of the march of progress.

* * *

THE Standard Oil Co. of New Jersey is planning considerable new construction at its Atlantic seaboard plants, according to E. M. Clark, president of the Standard Oil Development Co. Erection of four Tube and Tank cracking units will shortly be begun at the Bayway plant and two more will probably be installed at the company's refinery in Baltimore. The maximum capacity of these cracking coils will be 9500 barrels each a day of charging stock.

In addition to these cracking units, Mr. Clark says there will be some revamping of asphalt equipment at the Bayonne, Baltimore and Charleston, S. C., plants for which the plans have not yet been fully worked out.

* * *

F. E. HOLSTEN, vice-president in charge of the refining of the Barnsdall Refining Co., announces the appointment of J. V. Brazier as assistant superintendent of the company's Barnsdall, Okla., refinery.

* * *

C. H. S. EDMONDS, known to many American refiners for his work with the Power Specialty Co., now the Foster-Wheeler Corp., a few years ago, recently read a paper before the Institution of Petroleum Technologists in London which is published in the latest issue of the journal of that institution.

Mr. Edmonds, who is now London representative of the Foster-Wheeler Corp., discussed in his paper Tube Still Distillation. He divided tube still installations into two classifications, the "once-through" or single flash type and the "step up" system involving the use of two or more tube stills and fractionating towers operated in series.

He gave a comprehensive discussion, illustrated by diagrams and photographs of crude distillation by means of pipe stills of various types.

* * *

A STORY of steady growth in the refining field is told in an article by F. E. Holsten, vice-president in charge of refineries of the Barnsdall company, which is published in the August issue of "Barnsdall," the company house organ.

The company entered the refining business in 1921, Mr. Holsten says, when it acquired the Bigheart Producing & Refining Co. at Bigheart, Okla. (name since changed to Barnsdall). This was the plant where J. S. Cosden started in the refining business. The record of the company's growth as a refiner from then on is thus chronicled by Mr. Holsten:

In 1924, centrifugal dewaxing equipment and additional filtering capacity installed.

Between 1921 and 1925, distilling capacity installed to bring the refinery's capacity to 3500 barrels a day.

In 1926, a pipe still designed by company engineers was installed with a capacity of 5000 barrels a day which until recently was one of very few pipe stills from which cylinder stocks could be made.

In 1926 company acquired two more refineries, one of 5000 barrels a day at Okmulgee and one of 3500 barrels at Wichita, Kan. The Okmulgee plant has Cross cracking stills and the one at Wichita has the Dubbs system. The plant at Barnsdall also is equipped with Cross cracking units.

Since acquiring the Okmulgee plant three pipe stills have been built there to replace the shell stills. These pipe stills increased the plant's capacity to 6500 barrels a day and greatly reduced costs, according to Mr. Holsten.

Our Industry—A Page of Facts and Personalities

By Paul Wagner

National Petroleum News

A number of shifts in personnel have been made necessary by the recent consolidation at Mexia of the Corsicana and Mexia branches of oil field supply companies operating in the central east Texas fault zone territory.

C. D. Burton, Corsicana manager of Oil Well Supply Co., will go to Big Spring, west Texas, after relieving Roy L. Combs, Mexia manager, in his vacation period. H. F. Oliver has been transferred to Mexia by Jarecki Manufacturing Co., which hereafter will maintain only a pipe yard at Corsicana.

G. Cuthbertson, formerly Corsicana manager of National Supply Co., now assists L. A. Pearce, Mexia manager. R. C. Trewbitt continues as Mexia manager of Frick-Reid Supply Co., with J. J. Cave, district field manager. G. A. Robinson continues as Mexia manager of Continental Supply Co., the Corsicana manager being transferred to Houston.

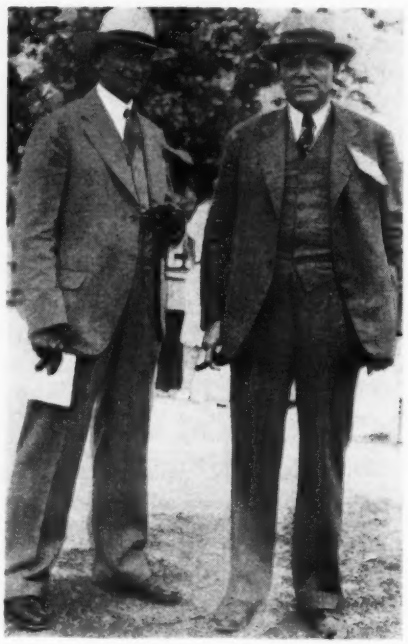
* * *

J. Harry Phelan, secretary-treasurer of the Yount-Lee Oil Co., Beaumont, is collecting what he hopes will be the finest private library of Texas lore and history in the state. Among recent additions to it is an old autograph book in which, in 1883, O. Henry, the famous author, wrote a sentiment. The book was obtained from Mrs. Clarence Stuckert of Brenham.

* * *

Robert G. Carr, independent oil man of San Angelo, was recently elected a member of the board of directors of the Board of City Development, becoming chairman of its oil division. Mr. Carr succeeds Rupert P. Ricker, resigned. Mr. Carr appointed as members of the oil division: W. F. Clark of the Delmar Oil Co., Texas subsidiary of the Indian Territory Illuminating Oil Co.; Walter H. Ritterbush, Phillips Petroleum Co.; Dwight L. Hunter, Western Oil & Royalty Co.; Herbert O'Bannon, cashier, San Angelo National bank.

Louis Lyons has been re-elected chairman of the Bossier City refinery safety committee of the Louisiana Oil Refining Corp., Shreveport. Pat Brazil was re-elected secretary. The election was at a meeting in the office of H. E. Reed, Bossier City refinery superintendent.



ADRIAN C. MOORE, LEFT AND JAMES S. ABERCROMBIE

Adrian C. Moore, left, and James S. Abercrombie, right, are two leaders in Gulf Coastal Texas petroleum development. Mr. Moore is vice-president of the Rycade Oil Co., which is headed by E. DeGolyer, New York, who is also president of the Amerada Corp. Mr. Abercrombie operates both as a producer and a drilling contractor under the corporate name of the J. S. Abercrombie Co., Inc.

* * *

Magnolia Petroleum Co., Dallas, has opened a land and leasing office at Sayre, Okla., in charge of D. R. Stokes.

* * *

J. P. Evans of Shreveport, La., proposes drilling a deep test for oil or natural gas in the delta country north of Anguilla, Miss., where he recently filed for record leaseholds totaling more than 4000 acres.

* * *

J. Elmer Thomas, Fort Worth geologist and oil producer, is now associated with the stock exchange house of Fenner & Beane, giving special attention to studies of petroleum conditions in relation to the securities market. He was first president of the American Association of Petroleum Geologists and is widely known in the industry.

The construction of a 1000-barrel skimming plant at Big Lake, Reagan county, Texas, by the Big Lake Refining Co., has resulted in the moving to that place of the following members of the operating organization: E. B. McKee, Tulsa, vice-president; W. S. Evans, superintendent; Laral Reagan, pipe foreman; Walter Scott, civil engineer; A. J. Nichols, Jr., laboratory department; R. R. Hitt, still foreman; E. R. Andres, bookkeeper.

* * *

E. Russell Lloyd, formerly on the United States Geological Survey and more recently engaged in private practice in the Rocky Mountain region, is now associated with Fisher & Lowrie, First National Bank building, Denver.

* * *

Harry L. Edwards, general superintendent of production of Humble Oil & Refining Co., recently returned to Houston headquarters after a vacation spent on the Pacific coast.

* * *

P. B. Whitney, formerly engaged in geological work out of Denver, is now at Los Angeles for The Texas Co., which some time ago entered Pacific coast operating territory through acquisition of stock control of the California Petroleum Corp.

* * *

E. H. Buckner, president of Houston Oil Co. of Texas and its subsidiary, Houston Pipeline Co., spent his vacation in the Rocky Mountain territory.

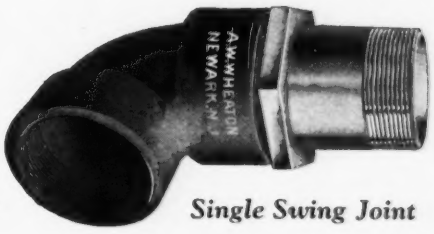
* * *

Francis E. Holbrook of Toronto is now secretary-treasurer of Imperial Oil, Ltd., succeeding T. C. McCobb, transferred to Standard Oil Co. of New Jersey at New York City.

* * *

Ed S. Hobbs of San Angelo, has been elected secretary and assistant treasurer of the Black Arrow Oil Co., San Angelo and Los Angeles, succeeding W. W. Hubbard, resigned. Rupert P. Ricker is president of the company and Floyd C. Dodson is second vice-president. Both live at San Angelo. Other officers, all living in Los Angeles, are Loren L. Hillman, first vice-president; Carl T. Long, third vice-president; and John E. McConnell, treasurer.

And in SWING JOINTS, *too*—



Single Swing Joint

it will pay you to get WHEATON Quality

They're ALL BRONZE—*not only the Easiest Swinging but the* Longest Lasting —*and there's a size for every need*

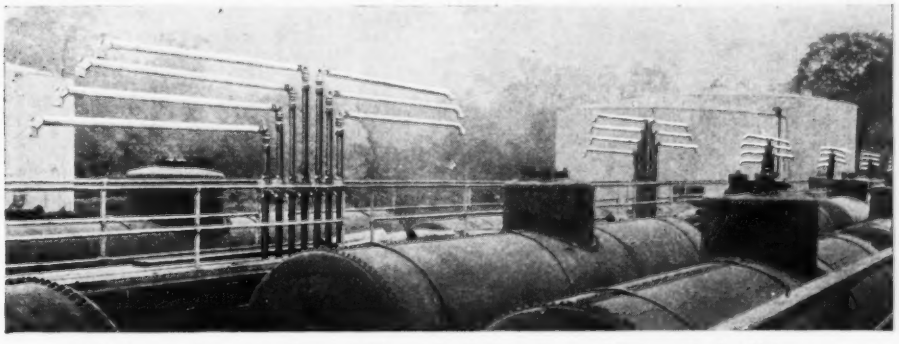
Double Swing Joint

NOT only do Wheaton Swing Joints function with smoothness—not only do they reduce strains and leaks—they *continue* to do so long after ordinary joints have been cast into the junk heap. And this is due to the *material* from which they are made: Wheaton Swing Joints are ALL BRONZE—*tough, long-lasting* bronze, which *neither crystallizes nor corrodes.*

Just as Wheaton Faucets and Valves are famed throughout the industry for their *fine fit and finish,* so are Wheaton Swing Joints universally known as the finest *fitting* and the smoothest *swinging.*

Installation of Wheaton Double Swing Joints; also, Wheaton Loading Valves and Wheaton Tank Truck Faucets.

Why not start *now* to *standardize* on Wheaton Swing Joints? You can secure *any size,* according to your need: 1″, 1¼″, 1½″, 2″, 2½″, 3″, 4″—large sizes for pipe lines, small sizes for curb pumps—single or double swing. Send for a sample, today. Give it your own test. If not entirely satisfactory, return it for credit or refund.



This view also shows an installation of Wheaton Double Swing Joints and Wheaton Loading Valves

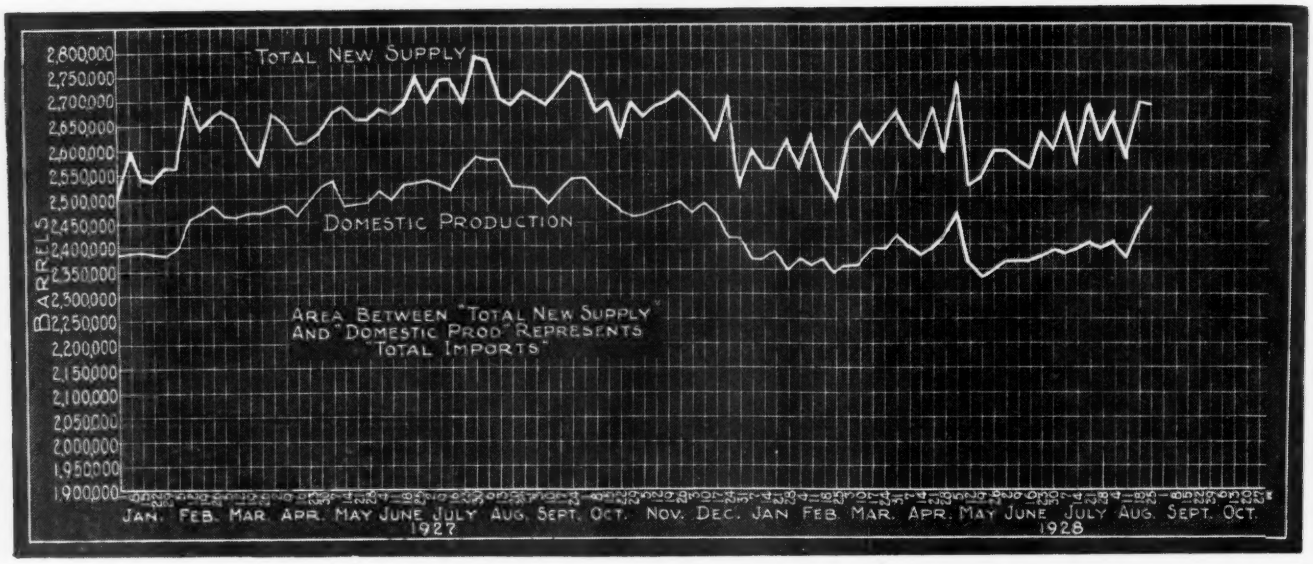
A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Empire Brass Mfg. Co., Ltd., London, Ontario, Canadian Manufacturers and Distributors

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Aug. 25	Aug.18
Production east of Rockies	**1,847,050**	**1,809,100**
Increase		**37,950**
Total production in U. S.	**2,477,450**	**2,444,500**
Increase		**32,950**
Crude oil imports	**205,428**	**246,714**
Decrease		**41,286**
Total crude supply	**2,682,878**	**2,691,214**
Decrease		**8,336**

OKLAHOMA

	Aug. 25	Aug. 18
North Braman	2,950	3,000
South Braman	1,450	1,450
Blackwell	3,400	3,450
Hubbard	2,600	2,600
Thomas	1,300	1,300
Tonkawa	12,800	13,050
Garber	8,100	8,250
Burbank	28,750	29,050
Osage, outside Burbank	27,100	26,800
Cushing	19,850	19,800
Yale Jennings	7,450	7,450
Davenport	1,850	1,900
Bristow-Slick	20,950	20,750
North Okmulgee	14,650	14,700
Pearson	3,400	3,500
Lyons-Deaner	5,800	5,800
St. Louis	76,450	63,550
Allen Dome	19,950	21,450
Cromwell	9,250	9,250
Papoose	4,150	4,150
Wewoka	5,750	5,650
Seminole	48,550	48,800
Bowlegs	52,450	54,800
Searight	12,450	13,350
Little River	112,800	90,950
Earlsboro	88,300	79,750
Duncan district	7,650	7,750
Graham	5,200	5,250
Fox	1,650	1,650
Healdton	14,000	14,000
Hewitt	9,750	9,650
Scholem Alechem	15,450	15,600
Others	52,850	53,000
Total, Oklahoma	699,050	661,450
Increase		37,600

KANSAS

Greenwood County	28,000	28,250
Florence-Covert	1,000	1,000
Peabody-Elbing	3,200	3,200
Eldorado-Towanda	12,750	12,800
Augusta-Fox-Bush	3,350	3,350
Rainbow Bend	1,500	1,550
Russell	3,800	3,850
Churchill	9,400	9,200
Oxford	9,900	10,150
Others	29,300	29,000
Total, Kansas	102,200	102,350
Decrease		150

NORTH LOUISIANA

Homer	4,300	4,350
Haynesville	5,900	5,950
Caddo, light	9,350	9,400
Caddo, heavy	3,100	3,250
De Soto, Red River	3,950	4,000
Elm Grove	550	550
Bellevue	750	750
Cotton Valley	4,400	4,500
Urania	6,900	6,850
Pleasant Hill	600	600
Total, North Louisiana	39,800	40,200
Decrease		400

ARKANSAS

El Dorado	5,200	5,250
Champagnolle	14,600	13,250
Smackover, light	7,250	7,400
Smackover, heavy	56,700	57,200
Stephens	1,000	1,050
Nevada	1,250	*1,250
Lisbon	1,950	*1,950
Others	100	100
Total, Arkansas	88,050	87,450
Increase		600

TEXAS (Outside Gulf Coast)

Panhandle District

Hutchinson County	33,600	34,500
Carson County	6,700	6,700
Gray County	20,950	20,500
Wheeler County	950	700
Others	500	750
Total, Panhandle District	62,700	63,150
Decrease		450

North Texas

Burkburnett	9,800	9,900
Electra	13,250	13,300
Iowa Park and K-M-A	3,800	3,800
Wilbarger	36,600	35,000
Archer County	20,100	20,200
Montague-Cooke	11,100	11,000
Others	650	650
Total, North Texas	95,300	93,850
Increase		1,450

West Central Texas

Stephens County	7,100	7,100
Eastland-Desdemona	6,900	7,000
Brown County	11,700	11,950
Coleman County	3,500	3,500
Callahan County	3,600	3,600
Shackleford County	10,700	10,550
Young County	8,100	8,000
Throckmorton County	900	900
Palo Pinto County	450	450
Jack County	1,750	1,800
Others	600	600
Total, West Central Texas	55,300	55,450
Decrease		150

West Texas

Jones County	1,950	1,800
Mitchell and Scurry Counties	3,100	3,100
Howard County	7,100	9,300
Reagan County	18,300	18,200
Crane and Upton Counties	60,700	61,300
Crockett County	3,350	3,050
Pecos County	65,000	68,700
Winkler County	173,800	177,000
Others	1,500	1,500
Total, West Texas	334,800	343,950
Decrease		9,150

East Central Texas

Mexia	6,800	6,850
Currie	450	450
Richland	550	550
Wortham	1,600	1,650
Corsicana-Powell	10,300	10,400
Others	2,300	.....
Nigger Creek	1,000	1,000
Total, East Central Texas	23,000	20,900
Increase		2,100

Southwest Texas

Luling	13,500	13,250
Lytton Springs	1,000	1,000
Somerset	700	700
Laredo District	8,600	8,700
Dale	1,250	1,200
Others	400	400
Total, Southwest Texas	25,450	25,250
Increase		200
Total, Texas—(Outside Gulf Coast)	596,550	602,550
Decrease		6,000

GULF COAST

Coastal Texas

West Columbia	7,800	7,950
Damon Mound	700	700
Big Creek	2,900	4,500
Boling	2,000	2,000
Blue Ridge	9,300	6,500
Pierce Junction	10,550	10,150
Humble	1,350	1,350
Goose Creek	6,900	6,800
South Liberty	3,950	3,800
Hull	10,500	10,300
Saratoga	1,000	1,000
Batson	1,400	1,400
Barber's Hill	600	600
Sour Lake	3,300	3,300
Spindletop	37,500	38,600
Orange County	3,500	3,600
Others	2,800	3,000
Total, Coastal Texas	106,050	105,550
Increase		500

Coastal Louisiana

Vinton	4,350	4,400
Sulfur Dome	3,200	3,400
Lockport	3,800	3,650
Sweet Lake	3,800	4,100
Evangeline	1,100	1,050
East Hackberry	3,650	4,650
Edgerly	1,000	1,050
Sorrento Dome	1,200	1,100
Others	1,200	1,300
Total, Coastal Louisiana	23,300	24,700
Decrease		1,400
Total Gulf Coast	129,350	130,250
Decrease		900

ROCKY MOUNTAIN

Wyoming

Salt Creek	38,450	30,000
Grass Creek	2,350	2,500
Elk Basin	1,050	950
Big Muddy	2,600	2,750
Lost Soldier	4,150	3,900
Rock Creek	2,750	2,750
Lance Creek	400	550
Others	5,600	7,350
Total, Wyoming	57,350	50,750
Increase		6,600

Montana

Cat Creek	1,700	1,700
Sunburst	8,000	8,300
Others	150	100
Total, Montana	9,850	10,100
Decrease		250

Colorado

Moffat (Craig)	1,150	750
Fort Collins	2,700	2,400
Florence	1,000	1,050
Others	2,900	3,300
Total, Colora'o	7,750	7,500
Increase		250

New Mexico

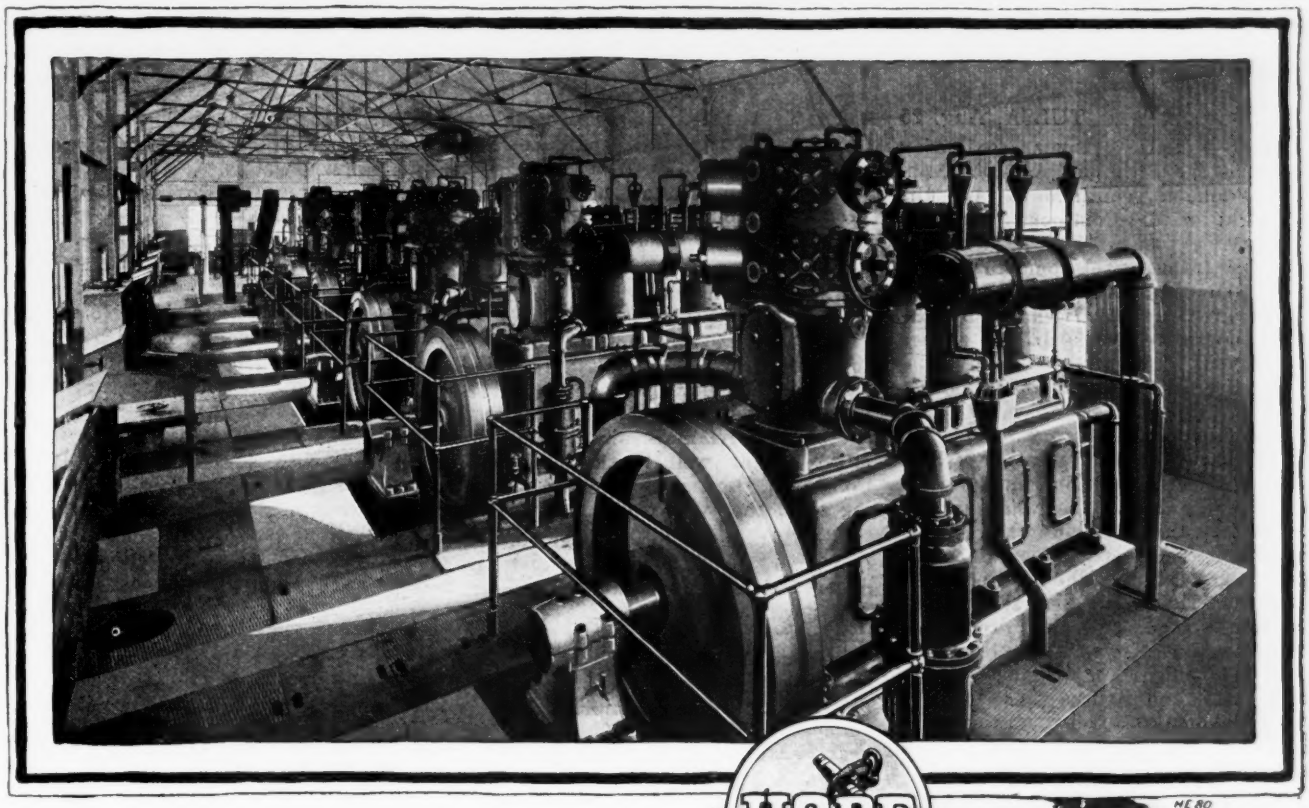
Table Mesa	.....	350
Hogback	400	400
Artesia	1,050	1,100
Rattlesnake	1,950	950
Others	200	200
Total, New Mexico	3,600	3,000
Increase		600
Total, Rocky Mountain	78,550	71,350
Increase		7,200

CALIFORNIA

Santa Fe Springs	38,000	38,000
Long Beach	192,000	192,000
Huntington Beach	53,500	52,500
Torrance	17,700	17,700
Dominguez	11,000	11,000
Rosecrans	6,000	6,000
Inglewood	29,700	29,700
Midway-Sunset	73,500	74,500
Ventura Avenue	50,000	52,500
Seal Beach	30,000	31,000
Others	129,000	130,500
Total California	630,400	635,400
Decrease		5,000
Eastern (Including Ill., Ind., Ky., O., W. Va., Pa., and N. Y.)	113,500	113,500

*Revised.

Undivided Responsibility



A HOPE contract for construction service is all-comprehensive. No "loop holes" are left—no chances for argument over questions of "who is responsible for what." From the turning of the first spade-full of earth to the completion of such a compressor station as is pictured above, executive control directs each operation. Hope contracts to deliver on time, complete and at lowest consistent cost. And it fulfils its contracts.

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Limiting Dry Holes Appear in St. Louis And Little River Areas

By John Power
N. P. N. STAFF WRITER

TULSA, Aug. 25

THE Little River extension and the St. Louis area, both in Oklahoma, continue to hold the spot-light in Mid-Continent producing territory.

In the former pool some dry holes have been completed along the edges of the area tested originally by the ten cooperative wells drilled earlier in the year.

Likewise in the St. Louis pool, a dry hole stopped the westward march of the producing territory.

Held back by rainy weather, which delayed some completions and also by the pinching in of the wells in accordance with the plan which holds production from each 40-acre tract to 1600 barrels daily, the Little River production shows but a small increase over the preceding week. Production as of August 18 was 101,627 barrels from 177 wells. For August 25, one week later, the figures were 105,344 barrels from 195 wells. Production from the entire Seminole area on the latter date was 313,707 barrels.

This does not include the 79,854 barrels from the St. Louis pool in eastern Pottowatamie county, about 60,000 barrels of which is high gravity Wilcox sand oil. It is estimated that there is from 20,000 to 30,000 barrels per day in Little River held back by the agreements now in force.

One of the largest wells completed during the week in the Little River area was not in the Wilcox sand, but in the Simpson, the horizon which produces prolifically in the original St. Louis pool and the Pearson Switch area.

This well, the Carter Oil Co. No. 1 C. Harjo, in the NE SW SW of Sec. 11-7-6, topped the Simpson early in the week at 4045 feet. Production the first 11 hours was 4735 barrels, and the well has held up close to the 8000-barrel mark since. The east offset to the well is the Gypsy Oil Co. No. 1 Denmark, which is producing from the Wilcox sand.

Along the southeast edge of the restricted area* the failures and producers are about the same in number. The northeast quarter of Sec. 23-7-6 had two water wells, while the Mid-Continent No. 1 Aleck, in the NW NE SE of the same section, made a well good for 3000 barrels per day from the Wilcox at 4307 to 4312 feet.

The first of the dry holes, the Pure Oil Co. No. 4 Cotcha in the NW SE NE of Sec. 23-7-6, had some oil in the Wilcox at 4559 feet. The well was drilled to 4566 feet, where the water encroachment was so rapid the well was plugged back five feet to 4561. Present production amounts to but 25 barrels of oil, and about twice that much water.

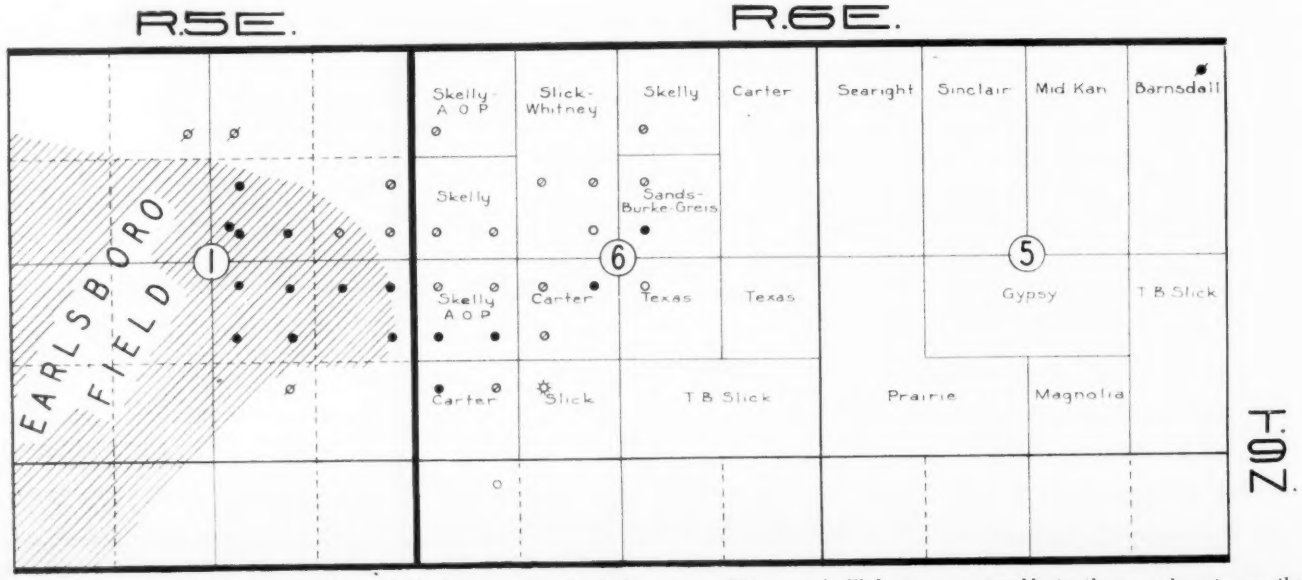
The Carter Oil Co. No. 2 Cotcha, in the NE SW NE of Sec. 23-7-6 swabbed 210 barrels of oil from the Wilcox at a total depth of 4357 feet. After swabbing 600 feet of water remained in the hole. The No. 1 well on the same lease, located in the SW NE, is a well good for about 6000 barrels from the Wilcox, topped at 4280 and drilled to 4285 feet. A small showing of water is reported with the oil.

The St. Louis pool registered with two producers and one dry hole in the Wilcox sand area. One of the producers, the Prairie Oil and Gas Co. No. 1 Gammon, in the NW SW NW of Sec. 30-7-5, extended production a quarter of a mile to the south. It also is one half mile west of the other producers.

The dry hole of the Magnolia Petroleum Co., in the NE SW of 19-7-5, indicates that the production to the west will not be continuous. The well is a direct west offset to the discovery well in the Wilcox sand. The discovery well, which has made as high as 9000 barrels per day, is declining as the other wells in the field release the gas pressure.

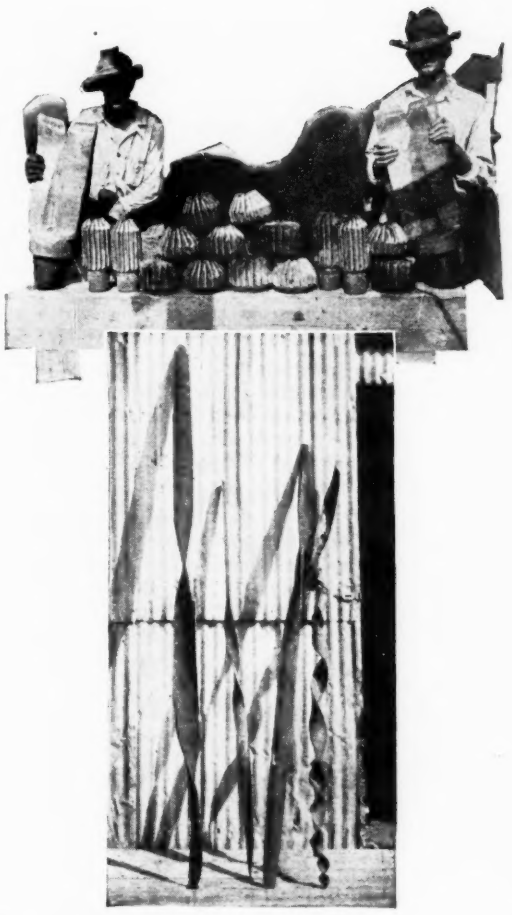
A recent gage of the well showed production to be 3900 barrels, while

*See map page 39. NATIONAL PETROLEUM NEWS, for August 22.



Map of the east extension to the Earlsboro field of the greater Seminole group. This spot is likely to cause trouble to those anxious to see the proration of fields having a per well average greater than 100 barrels, as the two opponents to the measure are both active here

The driller goes fishing . . .



Upper view shows a group of Haynes Stellite junk milling tools. Below, long sections of pipe fished from hole after Haynes Stellite milling tools had milled away the rest of the pipe.

FISHING to most of us implies pleasant hours—far too short. But to the oil man fishing means long and arduous labor.

In the Gulf Coast Oil Fields, fishing has been made much less arduous by the use of junk milling tools Stellited with Haynes Stellite. Because it outlasts any other metal, Haynes Stellite has been responsible for the saving of many a hole.

This simple application of Haynes Stellite has lessened one of the driller's chief troubles. You men who stand at the headache post should investigate Haynes Stellite junk milling tools when you next go fishing.

Ask our nearest district sales office about it.

HAYNES STELLITE COMPANY

Unit of Union Carbide UCC *and Carbon Corporation*

DISTRICT SALES OFFICES

CHICAGO—1949 Peoples Gas Bldg.
CLEVELAND—628 Keith Building
DETROIT—4-240 Gen'l Motors Bldg.
HOUSTON—6119 Harrisburg Blvd.
LOS ANGELES—1310 Santee Street
NEW YORK CITY—30 East 42d St.
SAN FRANCISCO—114 Sansome St.
TULSA—Exchange Nat. Bank Bldg.

General Offices—Kokomo, Indiana

Stelliting with

HAYNES STELLITE

the percentage of cut oil increased during the week until it is making about 9 per cent emulsion. This cutting is to be expected, as three offsets, one west, one north and one diagonally northeast are all water wells in the Wilcox sand.

The other producer in the St. Louis field was the No. 3 Hembree well of T. B. Slick, Inc. This well topped the Wilcox sand at 4120 feet. No oil was encountered from that depth to 4126. When deepened to a total depth of 4162 the well started flowing, having an initial production of 395 barrels per hour.

The four wells on the T. B. Slick lease, which is a "long forty" covering the east half of the west half of the SE of 19-7-5, made a total 30,240 barrels for the 24 hours ending seven a. m. Aug. 25. While none of the wells on the Slick property have been as big as the gusher on the Youts lease of the Independent Oil and Gas Co., they make a more imposing total production, as the Independent lease produced the comparatively small amount of 19,580 barrels for the same period of time.

Total recovery to date from No. 1 Hembree well of T. B. Slick is fast crowding the half-million barrel mark. It came in June 10 and has made an average of close to 6000 barrels per day since.

The Maud pool had a set-back during the week, the Indian Territory Illuminating Oil Co. completing its No. 1 Ritenour for a hole full of water in the Wilcox at 4614 feet. The test is in the SE SW SW of Sec. 22-8-5.

The area between the St. Louis pool on the western edge of twp. 7N-5E and the Pearson Switch district on the western edge of twp. 7N-4E, Pottowatamie county, has a wildcat producer shut down for pipe line connections.

This newcomer is the Magnolia Petroleum Co. No. 1 Ingle, in the NW NE NE of 34-7-4. It topped the Hunton lime at 3960 feet and made several flows totaling 200 barrels after being drilled to 3969 feet. The well is about midway between the two pools, and about three miles south of the line of production.

The fortunes of the oil game seem to be smiling rather consistently on Mr. Slick at the present time. His No. 1 James, in the NW SE SW of Sec. 6-9-6, had the Cromwell sand at 4093 to 4103 feet. Instead of oil, however, he was rewarded with a gas well good for from 75 to 100 million cubic feet of gas per day. With an active drilling campaign such as is under way in the Seminole district now, gas is a readily marketable product. Under the law, 25 per cent of the open flow capacity of a gas well can be marketed. The well gave some little trouble after being drilled in, but is now under control, and arrangements are understood to be going ahead for sale of its gas.

This gas well in 6-9-6 was drilled in the extension to the Earlsboro field opened up last spring by the Skelly Oil Co.—Atlantic Oil Producing Co. No. 1 Sherry, in the SW NW SW of 6-9-6. There are several drilling wells in the neighborhood, and there have been some extremely good producers completed recently.

Late last week the Burke Greis-Sands Petroleum Co. brought in a well in the SW NE of 6-9-6, for better than 3000 barrels. The Carter Oil Co. No. 4 James, topped the Wilcox at 4317 feet. After a 20-quart shot the well produced 5045 barrels in 24 hours.

The Wilcox producer of the Gypsy Oil Co., Marland Production Co., Bu-Vi-Bar Petroleum Corp., in Sedgewick county Kan., is drawing attention from Kansas oil men, and near oil men. Fancy prices are being offered for royalties, particularly those which can be bought and put in escrow, but there have been but three wells located in the new pool. Two of these are locations on which no more work has been done than the driving of the location stake. The only well to start drilling is the Allison and Fitzwilliams test in the NE NW NE of 24-26S-1W.

All remains quiet in the Texas Panhandle, production there for the week ending August 22 averaging 62,621 barrels from 1456 wells, 77 barrels more than the preceding week.

There is a general disinclination to start new work of any magnitude until the question of state restriction is settled.

Cooperation Talked at Santa Fe Springs

LOS ANGELES, Aug. 25

THE spirit of cooperation among oil companies in the development of new producing districts is already making itself felt in the rush of activity at Santa Fe Springs.

Less than a month ago the Wilshire Oil Co. brought in a well in a new light oil sand just above 6000 feet. The field, producing from old wells in upper structures, had been inactive for some time. Now there are about 150 new operations under way and about 50 tentative locations announced.

Oil company executives and engineers at Santa Fe Springs have under consideration a plan for taking the excess gas which will probably be produced along with the oil in the new deep zone, and pumping it into the partially depleted Meyer zone. The Meyer zone is just above the new deep zone.

Although it will be probably some months before the oil companies at Santa Fe Springs will be face to face with the problem of taking care of this excess gas, it is hoped to have a practical plan ready to put into operation when that time does come.

A jointly owned operating company may be effected to take in operators interested in either the Meyer zone or the deep zone, which company would place compressor plants at central points to pump gas into the Meyer zone.

The Union Oil Co. has already experimented in the pumping of excess gas produced from other structures in the Santa Fe Springs field in the Meyer zone, it is understood.

Drilling activity continues at a feverish pace in this field, with 18 locations, 44 rigs, 75 drilling or preparing to spud and 7 holes being deepened, as of Aug. 25. In addition, more than 50 tentative locations have been announced.

This is probably the record for activity in any field for a deeper sand, where only one well is on actual production from the deep zone, with owners of this well withholding actual figures as to production, depth, etc.

Many oil men in California are convinced that the new deep zone underlies most, if not all the present Santa Fe Springs productive area.

The only reason that not to exceed 75 wells are drilling today or preparing to start at once is the scarcity of steel derricks, heavy drilling equipment and lack of time to get started.

By the close of next week, the number of actively drilling wells will exceed 100. This number will probably be doubled by the middle of September.

General Petroleum Corp. is leading all other companies in starting new wells and should have at least 17 strings of tools running next week. Some of these wells are contracted.

It is understood that it is the plan of some companies to shut down their Meyer zone producers when located near a well drilling for the deep zone. Early this week one 600-barrel Meyer zone producer had to be killed as drilling mud was showing up in the flow, coming from a nearby deep zone driller.

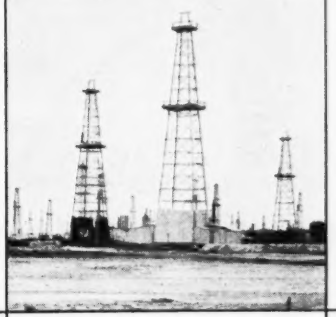
The Potrero district just outside of the Los Angeles city limits, almost midway between Rosecrans and Inglewood, is also attracting attention this week.

Associated Oil Co. has penetrated almost 150 feet of fairly rich oil sand in its Cypress No. 3, located about 600 feet northwest of Cypress

(*Continued on Page* 102)

INTERNATIONAL IDECO OIL FIELD EQUIPMENT
(GALVANIZED)

IDECO DERRICKS
have never been successfully imitated. They deliver years of uninterrupted service. Strong, easy to erect, light in weight they have no equal.



IDECO
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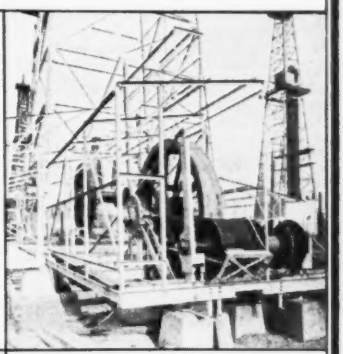
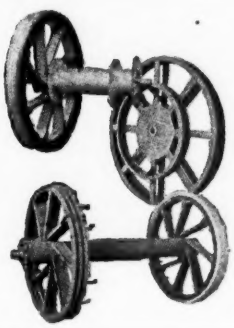
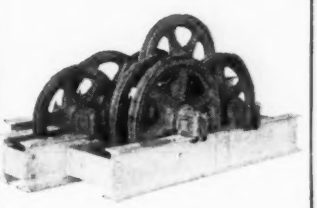
No drilling requirements are too severe. Durable, satisfactory and economical, 100% salvable, they may be used with any standard make of equipment.



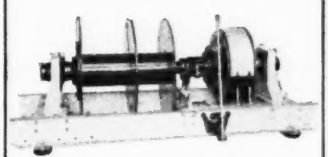


Strong, true running and free from vibration the user of IDECO Steel Wheels eliminates his wheel troubles and saves many times their initial cost.

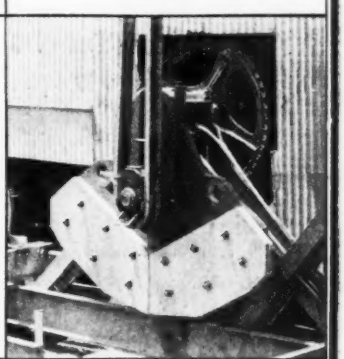


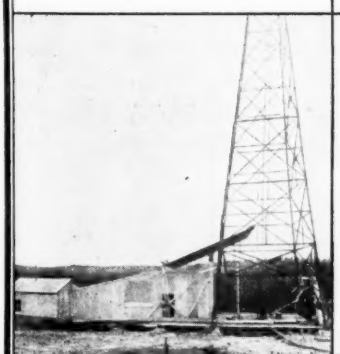
IDECO Crown Blocks save power, wear on the lines and bearing trouble. Designed and tested for high speed, heavy work—they pay for themselves many times over on the first job.

Simplicity of design and minimum of parts are found in IDECO Chain Driven Sand Reels. Portable, easy to install, simple to adjust and fool proof. Operates at high speeds with any make of equipment

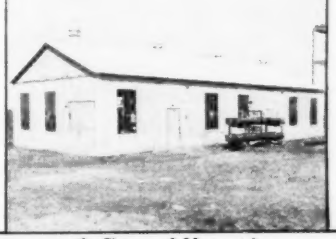


Smooth vibrationless pumping by using IDECO Crank Counter balances practically eliminates shut downs due to broken rods, saves power, belt wear, band wheels and rig. Installed on any standard rig.





IDECO Sectional Belt and Engine Houses—light portable structures in standard sizes, adaptable to all rigs. Adequately flashed, long life, ease of erection, fire and rust proof plus 100% salvage they solve the building problem.



Highly engineered, permanent yet portable, fire and rust proof, built of the finest materials with galvanized frames and sash IDECO Standard Steel Buildings can be adapted to any shape or style of one story construction.

Write For Literature and Specification.

THE INTERNATIONAL DERRICK & EQUIPMENT CO.

Detroit, Charleston, Dallas, Houston, Mexia, Wichita Falls, Odessa, Pyote, Amarillo, Borger, Corsicana, Pampa, Panhandle, Shreveport, Oil City, Smackover

The largest company devoted exclusively to the manufacture of steel (galvanized) equipment for the oil, gas and artesian industries.

COLUMBUS, OHIO **TORRANCE, CAL.**

Allen, Sasakwa, Eldorado, Tulsa, Tonkawa, Drumright, Okemah, Seminole, Wewoka, Denver, Casper, Torrance, Los Angeles, Taft

***California Representative,* National Supply Co. *of* California**

Export Representation: 74 Trinity Place, New York City; Columbus, Ohio; Los Angeles, Calif. and Houston, Texas

Seminole District Production by Companies and Leases, August 22 and August 15, 1928

BOWLEGS POOL

Company	Farm	S.T.R.	Aug. 22 Wells	Aug. 22 Prod.	Aug. 15 Wells	Aug. 15 Prod.
Amerada	Rascoe	15- 8-6	8	1,405	8	1,245
Atlantic	Baker	1- 8-6	4	435	4	450
Atlantic	Fleet	23- 8-6	3	190	3	319
Atlantic	Grayson	21- 8-6	4	900	4	864
Atlantic	A. Jones	10- 8-6	2	65	2	85
Atlantic	C. Jones	9- 8-6	2	163	2	102
Total Atlantic			15	1,753	15	1,904
Barnsdall	McNac	28- 8-6	1	22	1	20
Barnsdall	Murrow	11- 8-6	4	628	4	664
Total Barnsdall			5	650	5	684
Carter	Bowlegs	15- 8-6	4	1,115	4	1,145
Carter	Burden	23- 8-6	2	35	2	40
Carter	Harjoche	15- 8-6	6	545	6	600
Carter	Hilly	23- 8-6	3	825	3	725
Carter	Jones	11- 8-6	4	660	4	675
Carter	McGeisey	21- 8-6	1	0	1	10
Carter	Mecco	9- 8-6	1	0	1	300
Carter	Walker	15- 8-6	4	395	4	530
Carter	Wise	23- 8-6	11	1,625	11	1,585
Total Carter			36	5,200	36	5,610
Dixie	Culley	11- 8-6	1	90	1	85
Empire	Lacey	15- 8-6	6	517	6	470
Empire	Wise	23- 8-6	2	80	2	327
Total Empire			8	597	8	797
Gypsy	Baby	6- 8-6	1	0	1	32
Gypsy	Bowlegs	22- 8-6	1	187	1	205
Gypsy	Barkus	6- 8-6	1	22	1	25
Gypsy	Bradley	8- 8-6	1	2	1	2
Gypsy	Cumsey	8- 8-6	4	472	4	677
Gypsy	Dosar	7- 8-6	1	0	1	25
Gypsy	Grayson	13- 8-6	4	370	4	422
Gypsy	Harjoche	10- 8-6	3	1,127	3	565
Gypsy	Henderson	13- 8-6	1	0	1	2
Gypsy	Jones	11- 8-6	1	92	1	87
Gypsy	Mosar	1- 8-5	1	0	1	25
Gypsy	Mission	5- 8-6	1	0	1	25
Gypsy	Walker	15- 8-6	7	1,135	7	1,240
Gypsy	Wise	23- 8-6	2	150	2	170
Total Gypsy			29	3,557	29	3,502
I. T. I. O.	Barnett	23- 8-6	2	339	2	339
I. T. I. O.	Barnett-B	24- 8-6	1	178	1	177
I. T. I. O.	Billington	22- 8-6	5	393	5	463
I. T. I. O.	Bowlegs	22- 8-6	10	1,603	10	1,576
I. T. I. O.	Davis	22- 8-6	4	958	4	1,006
I. T. I. O.	Fay	13- 8-6	9	1,754	9	2,034
I. T. I. O.	Goforth	15- 8-6	12	1,426	12	1,350
I. T. I. O.	Livingston	15- 8-6	10	2,437	10	2,297
I. T. I. O.	Lizzie	13- 8-6	2	371	3	484
I. T. I. O.	Walker	15- 8-6	8	906	8	1,011
I. T. I. O.	Williams	12- 8-6	1	81	1	178
I. T. I. O.	Wilmott	15- 8-6	4	350	4	323
I. T. I. O.	Work	24- 8-6	1	112	1	119
I. T. I. O.	Youngblood	24- 8-6	2	86	2	2
Total I. T. I. O.			71	10,994	72	11,448
Magnolia	Davis	13- 8-6	3	494	3	456
Magnolia	Davis-M	13- 8-6	1	236	1	232
Magnolia	Hammond	10- 8-6	7	990	7	848
Magnolia	Rhodes	12- 8-6	6	1,797	6	2,408
Magnolia	Van Buskirk	9- 8-6	1	250	1	185
Total Magnolia			18	3,767	18	4,129
Marland	Maines	7- 8-6	1	50	1	50
McCulloch	Bowlegs	22- 8-6	2	300	2	305
Mid-Continent	Baker	10- 8-6	4	773	4	743
Mid-Continent	Bowlegs	22- 8-6	1	5	1	2
Mid-Continent	Smith	12- 8-6	6	415	6	445
Total Mid-Continent			11	1,193	11	1,190
Minnehoma	Bowlegs	15- 8-6	4	305	4	305
Prairie	Gahagan	23- 8-6	4	430	4	425
Prairie	Harber	10- 8-6	8	2,900	8	2,725
Prairie	Jones	11- 8-6	4	470	4	500
Prairie	Templeton	12- 8-6	6	1,565	6	1,685
Prairie	Whitney	23- 8-6	4	730	4	740
Total Prairie			26	6,095	26	6,075
Pure	Reed	14- 8-6	14	3,145	14	3,774
Pure	Strother-D	14- 8-6	4	276	4	404
Pure	Strother-F	10- 8-6	7	2,211	7	2,075
Total Pure			25	5,632	25	6,253
Roxana	Taylor	16- 8-6	5	38	5	38
Shaffer	Lacy	14- 8-6	3	285	3	260
Sinclair	Bowlegs	22- 8-6	1	7	1	15
Sinclair	Cumsey	10- 8-6	4	1,556	4	1,686
Sinclair	Ellen	11- 8-6	7	1,052	7	917
Sinclair	Harjo	14- 8-6	3	942	3	1,020
Sinclair	Jones	10- 8-6	7	720	7	533
Sinclair	Taylor	10- 8-6	4	1,668	4	1,767
Sinclair	Taylor-W	10- 8-6	3	649	3	780
Sinclair	Walker	22- 8-6	4	800	4	640
Total Sinclair			33	7,394	33	7,358
Slick	Jones	3- 8-6	1	430	1	508
Texas	Reed	14- 8-6	11	1,250	11	1,550
Tidal	Grayson	13- 8-6	4	240	4	360
Tidal	Harjoche	10- 8-6	6	1,570	6	1,695
Total Tidal			10	1,810	10	2,055
Twin States	Hayes	8- 8-6	1	230	1	995
Twin State	Jones	11- 8-6	3	9	3	3
Total Twin States			4	239	4	998
TOTAL BOWLEGS			327	53,034	328	56,349

EARLSBORO

Company	Farm	S.T.R.	Aug. 22 Wells	Aug. 22 Prod.	Aug. 15 Wells	Aug. 15 Prod.
Amerada	Anderson	15- 9-5	2	769	2	784
Amerada	Cowden	4- 9-5	7	1,468	7	1,410
Amerada	Rogers	3- 9-5	2	306	2	333
Total Amerada			11	2,543	11	2,527
Atlantic et al	Foreman	18- 9-5	1	149	1	155
Barnsdall	Brown	10- 9-5	4	2,477	4	2,425
Barnsdall	F. Bruner	2- 9-5	3	763	2	623
Barnsdall	N. Bruner	10- 9-5	3	1,252	3	1,172
Barnsdall	Cudjo	14- 9-5	1	25	1	25
Barnsdall	D. Davis	11- 9-5	3	199	3	181
Barnsdall	J. Davis	11- 9-5	4	1,169	4	1,220
Barnsdall	M. Davis	11- 9-5	3	59	3	21
Barnsdall	Gibson	9- 9-5	8	2,415	8	2,375
Barnsdall	Hern	15- 9-5	1	1	1	2
Barnsdall	Ingram	1- 9-5	8	1,156	8	1,129
Barnsdall	Pack	10- 9-5	4	152	4	184
Barnsdall	Peter	10- 9-5	4	109	4	119
Barnsdall	Sango	1- 9-5	4	4,076	4	4,429
Barnsdall	Sebolka	15- 9-5	1	351	1	320
Barnsdall	H. Sullivan	11- 9-5	1	11	1	0
Barnsdall	Sull-Harjo	10- 9-5	2	43	2	35
Banrsdall	Watsutke	12- 9-5	4	1,373	4	1,036
Total Barnsdall			58	15,631	57	15,296
Burke-Greis	Wisner	6- 9-6	1	2,340	1	1,950
Carter	Davis	13- 9-5	2	225	2	180
Carter	James	6- 9-6	2	5,745	1	40
Carter	Sango	1- 9-5	4	390	4	435
Total Carter			8	6,360	7	655
Continental	Kays	2- 9-5	2	72	2	50
Continental	Spencer	12- 9-5	4	900	4	1,340
Total Continental			6	972	6	1,390
Empire	Barker	12- 9-5	1	57	1	75
Empire	Edmundson	3- 9-5	3	158	3	140
Total Empire			4	215	4	215
Gypsy	Bruner	10- 9-5	4	3,455	4	3,032
Gypsy	B. Carter	11- 9-5	9	4,220	9	3,945
Gypsy	Earl	16- 9-5	1	17	1	18
Gypsy	Hunick	5- 9-5	1	2,300	1	2,030
Gypsy	Noble	12- 9-5	4	2,162	4	2,097
Gypsy	Peter	10- 9-5	3	305	3	342
Gypsy	Sango	1- 9-5	11	10,272	9	6,555
Gypsy	State	16- 9-5	4	972	4	910
Total Gypsy			37	23,703	35	18,929
Independent	Bruner	10- 9-5	3	317	3	300
Independent	Sullivan	10- 9-5	2	30	2	22
Independent	Knapp	8- 9-5	3	1,867	3	1,940
Indep.-Margay	Gaines	11- 9-5	4	675	4	650
Total Independent			12	2,889	12	2,912
Magnolia	Bryant	9- 9-5	6	551	6	473
Magnolia	Cowden	4- 9-5	4	40	4	40
Magnolia	Dixon	12- 9-5	1	48	1	28
Magnolia	Edmundson	3- 9-5	3	20	3	20
Magnolia	Holmsley	11- 9-5	7	1,210	7	642
Magnolia	Hyde	13- 9-5	1	1,624	1	1,624
Magnolia	Ingram	10- 9-5	1	25	1	28
Magnolia	Lena	10- 9-5	3	50	3	56
Magnolia	Seay	12- 9-5	9	3,012	9	2,122
Magnolia	Simpson	10- 9-5	3	80	3	42
Magnolia	Sparks	11- 9-5	7	784	7	877
Magnolia	Sullivan	12- 9-5	3	80	3	80
Total Magnolia			48	7,524	48	6,032
Mid-Continent	McCumber	9- 9-5	7	90	7	95
Mid-Kansas	Anderson	14- 9-5	3	80	3	85
Phillips	Dunnaway	14- 9-5	1	25	1	25
Prairie	Baker	24- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	5	3,155	5	3,250
Prairie	C. Graham	3- 9-5	2	25	2	25
Prairie	O. Graham	10- 9-5	4	1,230	4	1,235
Prairie	Stidham	11- 9-5	13	2,850	13	2,815
Total Prairie			25	7,310	25	7,375
Roxana	Bayliss	17- 9-5	1	14	1	14
Roxana	Hearn	13- 9-5	1	153	1	143
Roxana	Spencer	12- 9-5	2	1,325	2	1,471
Total Roxana			4	1,492	4	1,628
Shaffer	Clark	1- 9-5	3	525	3	575
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	1	50	1	35
Sinclair	Sango	2- 9-5	4	3,500	4	3,300
Total Sinclair			6	3,565	6	3,350
Skelly	Sherry	6- 9-5	2	3,086	2	3,204
Skelly	Spencer	12- 9-5	1	367	1	377
Total Skelly			3	3,453	3	3,581
Superior	Ingram	1- 9-5	2	827	2	1,034
Superior	Walker	2- 9-5	2	3,240	2	3,377
Total Superior			4	4,067	4	4,421

(Continued on Page 44)

INTERNATIONAL
LOW-COST HAULING

"...Surpass all others in service and durability"...

A 3-ton International (Semi-Trailer) used by the Gypsy Oil Company hauling a 15,000 lb. engine and compressor at Earlsboro, Oklahoma.

...says Roy Parkhill, President, Parkhill Truck Company

P. O. Box 546, Okmulgee, Okla.

"WE are using a fleet of 19 trucks, all of which are Internationals with the exception of two. We have used many different makes of trucks but found International Trucks surpass all others in service and durability, and we have found that we can operate them with less cost of upkeep than any others we have used.

"We are today using two 3-ton trucks which we purchased from you in June, 1925, and they are still giving satisfactory results."

Mr. Parkhill (shown at the left, above) is prompted to send us this letter because of the splendid service that his International Trucks are rendering while hauling for the Independent Oil & Gas Company in the Seminole Field, Oklahoma.

Every oil man knows what tremendous abuse is imposed on a truck in the oil industry . . . which makes Mr. Parkhill's letter all the more significant. Heavy loads, poor roads (or none at all) . . . every conceivable test and strain. Under these trying conditions, International Trucks perform to win enthusiastic endorsement.

But that's just what to expect from the International line, because every unit is built to give complete satisfaction. The line offers the ¾-ton Special Delivery; 1¼-, 1½-, and 2-ton Speed Trucks with 4- or 6-cylinder engines; Heavy-Duty Trucks 3½- and 5-ton, double reduction and chain drive, and McCormick-Deering Industrial Tractors. Wheelbases and equipment for every class of work. Write for names of owners in the oil business.

McCORMICK-DEERING INDUSTRIAL TRACTOR

The McCormick-Deering Industrial Tractor with hoist and winch equipment exactly meets the demands of the oil field operator for a flexible, powerful, easily-transported hoist. This view shows one at work in an Oklahoma oil field.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
(Incorporated)

606 S. Michigan Ave. Chicago, Illinois

Seminole District Production by Companies and Leases, August 22 and August 15, 1928

(*Continued from Page 42*)

Company	Farm	S.T.R.	Aug. 22 Wells	Aug. 22 Prod.	Aug. 15 Wells	Aug. 15 Prod.
Texas	Anderson	2- 9-5	8	515	8	435
Texas	Brown	10- 9-5	8	300	8	225
Texas	Rogers	5- 9-5	4	2,505	4	2,655
Texas	Wilmott	10- 9-5	7	585	7	545
Total Texas			27	3,905	27	3,860
Tidal	Walker	35-10-5	1	55	1	520
Tidal	Watkins	9- 9-5	7	3,000	7	3,040
Total Tidal			8	3,055	8	3,560
Twin State	Barker	12- 9-5	2	70	2	77
Twin State	Hern	2- 9-5	4	246	4	340
Total Twin State			6	316	6	417
TOTAL EARLSBORO			283	90,209	...	.....
LITTLE RIVER						
Amerada	Nitey	2- 7-6	3	1,395	3	1,420
Amerada-Wilcox		35- 7-6	2	355	2	365
Total Amerada			5	1,750	5	1,785
Barnsdall	Hotulke	22- 7-6	2	1,631	1	3,446
Blackwell	Bennett	11- 7-6	3	2,755	3	5,455
Blackwell	Nitey	35- 8-6	6	1,449	6	1,764
Total Blackwell			9	4,204	9	7,219
Carter	Cotcha, M	23- 7-6	1	380	0	0
Carter	Fish	36- 8-6	6	790	6	355
Carter	Harjo, C	11- 7-6	1	8,560	0	0
Carter	Harjo, M	13- 7-6	1	1,710	0	0
Carter	Jackson	11- 7-6	3	1,600	3	3,585
Carter	Larney	24- 7-6	1	1,600	1	920
Carter	Lena	10- 7-6	1	1,600	0	0
Carter	Moore	11- 7-6	1	1,600	1	2,350
Carter	Tewee	14- 7-6	2	2,155	0	0
Carter	Wilson	12- 7-6	1	1,600	1	1,600
Total Carter			18	21,595	12	8,810
Champlin	Tewee	14- 7-6	1	2,240	0	0
Continental	Cosar, M	25- 8-6	1	395	1	185
Continental	Cosar	36- 8-6	7	1,315	5	1,385
Continental & Fisher	Milsey	11- 7-6	1	1,765	0	0
Total Continental			9	3,475	6	1,570
Empire	Charty	24- 7-6	1	500	0	0
Gypsy	Brown	33- 8-6	1	1,356	1	2,545
Gypsy	Campbell	33- 7-6	2	195	1	182
Gypsy	Conard	22- 7-6	1	1,202	0	0
Gypsy	Cosar, M	25- 8-6	2	2	2	20
Gypsy	Cosar, W	36- 8-6	2	735	2	457
Gypsy	Cotcha	23- 7-6	2	1,812	1	1,802
Gypsy	Denmark	11- 7-6	2	2,342	1	0
Gypsy	Hulhoke	14- 7-6	5	4,214	5	9,666
Gypsy	Mungee	1- 7-6	1	25	1	25
Gypsy	Pottie	35- 8-6	4	570	4	885
Gypsy	Renton	11- 7-6	3	1,032	3	1,980
Total Gypsy			25	13,485	23	17,562
Independent	Davis, R	13- 7-6	2	2,250	0	0
Independent	Harris	23- 7-6	3	1,954	2	575
Independent	Tewee	14- 7-6	2	2,640	2	6,100
Independent & White Eagle	Davis	2- 7-6	3	1,395	3	1,450
Total Independent			10	8,239	7	8,125
I. T. I. O.	Campbell	1- 7-6	1	257	1	257
I. T. I. O.	Dungan	35- 8-6	3	1,388	3	1,296
I. T. I. O.	House, M. A.	1- 7-6	1	46	1	30
I. T. I. O.	House, W. E.	1- 7-6	1	37	1	37
I. T. I. O.	House, B.	2- 7-6	4	1,286	4	1,339
I. T. I. O.	Hull	26- 8-6	3	1,188	2	1,174
I. T. I. O.	Jackson	1- 7-6	3	1,001	3	1,033
I. T. I. O.	McCulla	1- 7-6	3	688	3	694
I. T. I. O.	Nitey	2- 7-6	6	463	6	538
I. T. I. O.	Phoebe "A"	36- 8-6	3	436	3	425
I. T. I. O.	Phoebe "B"	36- 8-6	4	199	4	199
I. T. I. O.	Reed	1- 7-6	1	31	1	36
I. T. I. O.	Soketheche	1- 7-6	3	673	3	688
Total I. T. I. O.			36	7,963	35	7,746
Magnolia	Cruse	2- 7-6	4	1,200	4	1,216
Magnolia	Denby	11- 7-6	2	1,610	1	44
Magnolia	Dixon	31- 8-7	1	0	1	7
Magnolia	Harjo "A"	14- 7-6	1	1,620	1	0
Magnolia	Pottie	35- 8-6	3	680	3	600
Magnolia	Reed	22- 7-6	2	1,240	1	0
Total Magnolia			13	6,350	11	1,867
Mid-Continent	Bruner	11- 7-6	1	1,615	1	525
Mid-Continent	Eleck	23- 7-6	1	2,435	0	0
Mid-Continent	Smith	5- 7-7	1	65	1	65
Mid-Continent	Wadsworth	36- 8-6	7	700	7	690
Total Mid-Continent			10	4,815	9	1,280
W. B. Pine	Hoyecha	26- 8-6	2	935	2	685
W. B. Pine-Phillips	Pottie	35- 8-6	2	407	2	495
Total Pine			4	1,342	4	1,180
Prairie	Chilcoat	25- 8-6	3	710	3	1,360
Prairie	Dungan	35- 8-6	1	30	1	35
Prairie	Gibson	14- 7-6	2	3,337	1	5,575
Prairie	Harris	14- 7-6	2	1,800	0	0
Prairie	House	2- 7-6	4	795	4	860
Prairie	Talley	14- 7-6	1	1,620	1	2,640
Prairie-Amerada	Sunny	14- 7-6	4	7,910	1	5,690
Total Prairie			17	16,202	11	16,160
Pure	Cotcha	14- 7-6	5	4,306	2	4,010
Pure	Harjo	11- 7-6	2	1,584	2	4,130
Total Pure			7	5,890	4	8,140
Reiter-Foster	Bunyard	14- 7-6	2	1,712	2	3,600
Roxana	Caesar	11- 7-6	1	162	1	178
Roxana	Hotulke	23- 7-6	1	1,587	1	0
Roxana	Johnson	13- 7-6	2	622	2	6,505
Total Roxana			4	2,371	4	6,683
Shaffer	Narcome	36- 8-6	1	355	1	50
Sinclair	Cosar	36- 8-6	3	1,815	3	2,020
Sinclair	Haney	12- 7-6	1	80	1	305
Sinclair	Tewee	14- 7-6	1	800	1	230
Total Sinclair			5	2,695	5	2,555
Skelly	Carl	14- 7-6	1	617	0	0
Slick	Williams	15- 7-6	1	1,600	1	100
Snowden-McSweeney	Tiger	13- 7-6	1	0	1	577
Superior	Soketheche	1- 7-6	1	10	1	10
Texas	Coker	1- 7-6	3	905	3	995
Texas	Janey	11- 7-6	1	1,145	0	0
Texas-Independent	Hotulke	23- 7-6	2	3,845	2	700
Total Texas			6	5,895	5	1,695
Tidal	House	1- 7-6	3	535	3	545
Tidal	Johnson	1- 7-6	1	30	1	30
Total Tidal			4	565	4	575
Twin State	Lowe	25- 8-6	1	175	1	175
Total Little River			194	115,676	164	100,910

SUMMARY

	Aug. 22 Wells	Aug. 22 Prod.	Aug. 15 Wells	Aug. 15 Prod.
TOTAL BOWLEGS	**327**	**53,034**	**328**	**56,349**
TOTAL EARLSBORO	**283**	**90,209**	**279**	**97,023**
TOTAL SEMINOLE	**294**	**47,825**	**294**	**49,633**
TOTAL SEARIGHT	**69**	**12,291**	**69**	**13,175**
TOTAL LITTLE RIVER	**194**	**115,676**	**164**	**100,910**
GRAND TOTAL SEMINOLE AREA	**1,167**	**319,035**	**1,134**	**299,090**
Average per well			**273**	**264**

Completions in North Louisiana and Arkansas, Week Ended August 23

Louisiana—Bossier Parish

Company	Well	Location	Depth	Yield
H. S. Goodwin, trustee	McDade No. 1	36-17-13	2710	dry, aband.
Bossier Parish—Elm Grove				
Palmer Corp.	Webb No. 1	23-17-12	858	20M gas
Winn Parish				
Humble O. & R. Co.	Bodcaw A-24	27-10-1W	1460	salt water, aband.
Morehouse Parish				
Gulf Refining Co.	Willie Higginbotham No. 1	42-20-7E	3575	dry, abard.
Elbert Pet. Co.	Morehouse Pltg. Co. No. 1	40-19-7E	2732	junked, aband.
Richland Parish				
Bouef River Pet. Co.	Sartor No. 1	9-15-6E	2494	salt water, aband.
La Salle Parish—Urania				
H. L. Hunt	Urania B-6	7-10-2E	1530	150 bbls.

Arkansas—Stephens

Company	Well	Location	Depth	Yield
Humble O. & R. Co.	Mixon No. 1	6-14-20	1153	20 bbls.
Rainbow City				
Lion O. & R. Co.	Union Sawmill Co. No. 1	6-17-13	3059	207 bbls., 3M ft. gas
Magno Prod. Co.	Townsend No. 3	10-17-14	3241	120 bbls.
Marr & Hoosier	Hicks No. 2	16-17-14	2078	salt water, aband.
C. E. Murdock et al	Gregory No. 3	10-17-14	3210	225 bbls.
Ohio Oil Co.	Carroll No. 2	6-17-13	2990	1210 bbls.
Oilwell Corp.	Snyder No. 1	6-17-14	3238	junked, aband.
Pure Oil Co.	E. F. Gregory No. 9	11-17-14	3237	dry, aband.
Rovenger Oil Corp.	W. H. Perdue No. 4	10-17-14	3245	salt water, aband.
Tharpe Drilling	Hicks No. 1	16-17-14	3342	dry, aband.

Drilling Operations in Oklahoma and Kansas, Week Ended August 25, 1928

	Aug. 25 Loc.	Rigs	Drg.	S.D.	Week Ended Total	Aug. 18 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Osage	5	5	25	...	35	8	6	23	4	41
Bristow-Cushing	3	4	31	8	46	4	2	40	4	50
North Oklahoma	9	6	52	28	95	11	3	52	29	95
South Oklahoma	10	5	85	28	128	10	16	84	31	141
Muskogee	...	9	37	27	73	...	8	38	28	74
Okmulgee-Bristow	14	35	63	22	134	15	42	55	21	133
Seminole Dist.	17	74	357	47	495	25	63	350	27	465
Total Oklahoma	58	138	650	160	1,006	73	140	642	144	999
KANSAS	*76	...	179	64	319	*82	...	160	72	314
GRAND TOTAL	134	138	829	224	1,325	155	140	802	216	1,313

*Location and Rigs combined.

Completions in Texas, Week Ended August 18, 1928

NORTH AND EAST CENTRAL

Anderson County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Humble	2-Jones	Roberts	3712-3728	165 (18 Hr.)

Brown County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Hodges et al.	1-Fry	Pyron	T.D. 1260	Dry
Schmidt	1-Strange	Hunt	T.D. 1007	Dry
Bradstreet	1-Woolridge	Kinnelson	T.D. 1293	Dry
Brown et al.	1-Shore	Banister	T.D. 1330	Dry
Cranfill-Reynolds et al.	1-Kellar	Mitchell	T.D. 1255	Dry
Heatley	1-Kilgore	Horan	T.D. 802	Dry
Baker-Hodges et al.	1-Gillispie		1209-1220	18
Humble	15-Kilgore	Delgando	1168-1198	35
Phillips	1-Dabney	Brooks	1168-1174	1M
Sinclair	5-Eubanks	Mitchell	1257-1272	20

Callahan County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Mortimor et al.	1-Jones	D&DA	494-495	5
Dees	1-Dyer	BBB&C	T.D. 1047	Dry
Swoveland et al.	1-Gilliland	Smith	T.D. 965	Dry

Comanche County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Weister	1-Lindley	De Moss	T.D. 2730	75

Coleman County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Charter	3-Crump	Scott	1867-1870	50
Manhattan	2-Overall	Sec-14, Blk-1	2311-2314	120
Cunningham et al.	1-Self	Loving	T.D. 2330	Dry
Henderson-Pitts	1-McDermott	Comol Co. Sch. Ld.	T.D. 476	Dry

Eastland County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Notures Treasure	1-Qualls	TE&L	T.D. 3889	Dry
Lobough	1-Truly	ET	T.D. 1530	Dry
Root et al.	1-Hazel	H&TC	3240-3261	1M
Lewis-Moore	3-Whittington	H&TC	1213-1247	15
Mook-Texas	1-Williamson	Van Norman	3188-3205	25
Operations	2-Williamson	Van Norman	2995-3515	10
Panhandle	72-Hightower	Van Norman	1218-1220	25
Root-Root	1-Kurklin	H&TC	3387-3418	300
Texas-Pacific	2-Higgenbathom	H&TC	3950-3988	75

Erath County

Company	Well Farm	Location Survey	Depth	Init. Prod.
English et al.	1-Barton	Goff	3237-3243	17M
Weatherall et al.	2-Hill	Kelly	T.D. 3365	Dry

Jack County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Walton	1-Macey	SP	T.D. 600	Dry
Panhandle	1-Doughty	Hughson	2956-2967	190
Panhandle	1-Smith	Hughson	2935-2947	285
Petroleum Prod.	1-Jones	Hughson	3168-3169	222
Ellis et al.	7-Ellis et al	Williams	453-470	4

Jones County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Phillips	3-Mason	T&P	2525-2530	225

Navarro County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Hughes	1-Lichlyter	Broyles	T.D. 3245	Dry

Palo Pinto County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Craig et al.	1-McAroy	Smith	T.D. 410	Dry

Shackleford County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Roeser-Pendleton	70A60-Cook	ET	1200-1250	150
Roeser-Pendleton	20C60-Cook	ET	1209-1211	20
Cranfil-Reynolds	2-King	T&P	T.D. 1860	Dry
Callahan et al.	4-Nail	ET	T.D. 1628	Dry
Harris et al.	2-Mathews	ET	T.D. 1247	Dry
Heltzel et al.	1-Reynolds	T&P	T.D. 1250	Dry

NORTH TEXAS

Archer County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Arco	5-Perkins et al.	DCSL	1012-1032	33
Barnsdall	1-Wilson	Howard	1706-1708	75
Gulf Prod.	2-Hayter	TE&L	1380-1394	46
Stumpf-Hines	7-Perkins	DCSL	998-1007	40
Texas	1-Hayter	TE&L	1386-1398	60
Texas	15-Richardson	Anderson	1341-1349	120
Arco	6-Perkins	DCSL	1002-1020	20
Gulf Prod.	2-Keys	Richardson	T.D. 1540	Dry
Pandem et al.	1-Young	TE&L	T.D. 1554	Dry

Clay County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Edwards et al.	2-Wetzel	BBB&C	T.D. 440	Dry
Grabbs-Gill	1-Gault	TE&L	T.D. 590	Dry
Herrick	1-Meyers	Thompson	T.D. 3500	Dry

Cooke County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Green	1-Thomas	BBB&C	T.D. 1102	Dry

Hardeman County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Milham Oil	1-Reeves	EL	T.D. 4520	Dry

Montague County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Godfrey	1-Campbell	Gaston	T.D. 2007	Dry

Wichita County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Hines et al.	1-Griffin	Jordan	T.D. 1928	Dry
Rayzar	1-Wigley	T&P	T.D. 1852	Dry
Trout et al.	2-Kemp et al.	KWVFL	T.D. 1819	Dry
Keller	1-Waggoner	Willis	T.D. 1292	Dry
Hines et al.	3-Waggoner	GC&SF	1375-1390	123
Hammon et al.	3-McCarty	Eaves	1329-1362	40
Douglas Prod.	9-Douglas	DL&C	1042-1071	10

Wilbarger County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Burton et al.	1-Waggoner	Skinner	T.D. 2554	Dry
Boker et al.	1-Waggoner	Butler	1889-1894	130
Barkley-Meadows	2-Waggoner	H&TC	1875-1890	50
Barr-Dillard	2-Waggoner	H&TC	1839-1862	100
Consolidated	1-Waggoner	H&TC	1869-1892	155
Fain-McGaha	12-Waggoner	H&TC	2398-2435	4000
Lawson	9-Waggoner	H&TC	2425-2431	20
Staley-Wynne	1-Waggoner	H&TC	2413-2418	400
Texas	356-Waggoner	H&TC	2398-2410	200
Texas	7-Waggoner	H&TC	2402-2419	734
Texas	8-Waggoner	H&TC	2378-2398	260
Waggoner-Farm	5-Waggoner	H&TC	1846-1848	125
Waggoner Farm	6-Waggoner	H&TC	1863-1883	42
Waggoner Ref.	3-Waggoner	H&TC	2406-2414	3260
Waggoner Ref.	4-Waggoner	H&TC	2403-2421	2722
Waggoner Ref.	5-Waggoner	H&TC	2392-2402	2400
Waggoner Ref.	6-Waggoner	H&TC	2385-2393	3300

Young County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Lyman et al.	1-Davis	Davis	3337-3356	425
Eureka Prod.	1-River bed	Clear F'k River	3330-3333	8M
Gross et al.	1-Hinson	Langan	1883-1900	25
Gulf Prod.	5-Lishe	Hall	3845-3863	30
Pitzer-West	3-Hinson	Pier	2216-2220	10
Texas-Pacific	3-Donnell	TE&L	3348-3367	300
Wichita Prod.	4-Hamilton	TE&L	1016-1019	20
Lange	1-Haygood	TE&L	718-719	19
Parker et al.	5-Johnson	Sergeant	587-594	2
Shappell	1-Garrett	TE&L	573-622	2
Gwynn	1-Kunkel	BBB&C	1140-1151	82
Mook-Tex	3-Davis	TE&L	555-573	50
Lyman et al.	1-Davis	Davis	T.D. 3275	Dry
Liner Drlg.	1-Donnell	Bellam	T.D. 3334	Dry
Hinson et al.	1-Ragland	Akers	T.D. 2550	Dry
Nash et al.	1	Oxford	T.D. 2540	Dry
Paull	5-Morrison	Sherrell	T.D. 4680	Dry
Pitzer-West et al.	1-Graham	Hill	T.D. 2185	Dry
Pitzer-West et al.	1-Callahan	Pier	T.D. 2200	Dry
Pitzer-West et al.	1-Robertson	TE&L	T.D. 2450	Dry
Pitzer-West et al.	1-Hinson et al.	Pier	T.D. 2260	Dry
Simms	1-Ragland	Hill	T.D. 2385	Dry
Texas	1-Street	TE&L	T.D. 4776	Dry
Westervelt et al.	8-Graham	Tankersley	T.D. 4240	Dry
McElroy et al.	1-Choate	TE&L	T.D. 755	Dry
Hines et al.	1-Kunkel	TE&L	T.D. 1256	Dry
Hines et al.	1-Rogers	TE&L	T.D. 1001	Dry
Wolfe	2-Whitehead	TE&L	T.D. 930	Dry

PANHANDLE

Carson County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Skelly	9-Shaffer	H&GN	3026-3050	241
Empire	1-Sheridan	H&GN	3630-3632	25M

Gray County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Hickory	1-Lester	ACH&B	2651-2868	35
Texas	3-Chapman	H&GN	2884-2885	850
Texas	2-McLarty et al.	ACH&B	2625-2813	125
Tobias et al.	1-Taylor	H&GN	2930-3170	15
Washoma	1-Smith	I&GN	3168-3178	172
Travis-Smith	1-Chapman	H&GN	T.D. 3054	Dry

Wheeler County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Rook et al.	1-McDowell	Lindsay	T.D. 4640	Dry
Vaughn et al.	1-Woodley	H&GN	1940-1985	33M
Woodley	1-Boyle	H&GN	2200-2240	3

WEST TEXAS

Crockett County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Simmons	1-Univ.	Univ.	T.D. 1140	Dry

Glasscock County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Gulf Prod.	2-Clay	W&NW	1885-1891	W&NW

Howard County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Merrick et al.	1-Roberts	W&NW	2952-2995	100 (1 Hr.)
Sun	1-Settles	W&NW	2530-2541	420 (4 Hrs.)
Sun	2-Settles	W&NW	2978-2983	142 (1 Hr.)
Merrick et al.	7-Hooks	W&NW	1890-1903	192
Magnolia	3-Roberts	W&NW	3016-3020	72 (1 Hr.)
Merrick et al.	4-Clays	W&NW	1741-1870	25

Pecos County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Gulf Prod.	10-Smith	TC	1492-1640	315 (8 Hrs.)
Gulf Prod.	9-Yates	Runnels Co. Sch. Ld.	1232-1300	21 (1 Hr.)
Mid-Kansas et al.	17-Taylor	TC	1499-1725	340 (1 Hr.)
Mid-Kansas et al.	20-Yates	Yates	1220-1270	395 (2½ Hrs.)
Mid-Kansas et al.	24-Yates	Yates	1561-1678	80 (1 Hr.)
Mid-Kansas et al.	2-Yates	I&GN	998-1206	250 (1 Hr.)
California	2-Smith	TC	1505-1526	65
Mid-Kansas et al.	2-Yates	TC	1558-1725	2500 (1 Hr.)

Upton County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Penn-Atlantic	1-Live Stock Exc.	T&P	T.D. 3932	Dry
Wentz	1-Tins	TC	T.D. 3543	Dry

Winkler County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Atlantic	1-Leck	PSL	3155-3168	4107
Gulf Prod.	2-Hendricks	PSL	2920-3074	3048
Gulf Prod.	18-Hendricks	PSL	2697-2802	12000
Humble	1-Walton	PSL	3013-3150	44M
Gulf Prod.	22-Hendricks	PSL	2685-2800	16800
Pure	4-Hendricks	PSL	2620-2628	10600
Roxana	5-Hendricks	PSL	2837-2851	1000
Roxana	2-Hendricks	PSL	2653-2714	1000
Southern Crude	T673A4-Hendricks	PSL	2866-2910	1200
Southern Crude	T672D2-Hendricks	PSL	2869-2870	11280
Texon	4-Hendricks	PSL	2901-2965	1800
Texon	3-Hendricks	PSL	2858-2860	1010
Southern Crude	T88F4-Hendricks	PSL	2705-2940	7200
Southern Crude	T88H4-Hendricks	PSL	2928-2988	1800
Southern Crude	T671E4-Hendricks	PSL	3017-3022	220

Completions in Oklahoma and Kansas, Week Ended August 23, 1928

OKLAHOMA

Caddo County

Company	Well No.	Location	Depth	Init. Prod.
Caddo	1	NW SW SW 4-5-9 W	1828-2300	40

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	2	SE SW SE 14-1-3 W	2250-2265	365
Schermerhorn et al.	6	NE SW 23-1-3 W	2557-2577	275

Comanche County

Company	Well No.	Location	Depth	Init. Prod.
Stevens et al.	1	C SE 27-2-12 W	T.D. 1209	Dry

Cotton County

Company	Well No.	Location	Depth	Init. Prod.
Perkins et al.	1	SW 1-2-10 W	T.D. 2310	Dry

Creek County

Company	Well No.	Location	Depth	Init. Prod.
Irelan	1	NW SE 16-17-11	T.D. 2591	Dry
Stebbens	1	NW SW NE 36-19-9	T.D. 2849	Dry
Bartlett-Hill	1	SW NW 8-18-9	2486-2587	2M
West et al.	1	SW NW 16-16-10	2890-2902	445
Magnolia	16	CSL SW NE 8-18-7 E	2416-2452	100
Magnolia	32	NW SW NW 16-18-7 E	2422-2560	125
Magnolia	2	C NE SE 35-18-7 E	3025-3069	½M
Shaffer	17	CNL SW NW 17-17-7 E	2835-2849	445

Ellis County

Company	Well No.	Location	Depth	Init. Prod.
Oklahoma Northern	1	C SE NW 9-21-25 W	T.D. 300	Dry

Gray County

Company	Well No.	Location	Depth	Init. Prod.
Okla. Gas Utilities	12	NE SE NE 26-5-8 W	2090-2400	30M
Okla. Gas Utilities	3	NW 36-5-8 W	2212-2392	20M
Clark-Cowden	1	NE SW SW 23-5-7 W	1857-1933	5M

Jefferson County

Company	Well No.	Location	Depth	Init. Prod.
McGinley et al.	4	SW SE SE 17-7-5 W	784-793	28
Lesh-McCall	5	SW SE 17-7-5 W	771-792	50
Lesh-McCall	7	SW SE 17-7-5 W	763-793	45
Gypsy	2	SE SW 17-7-5 W	755-789	15&5M

Johnson County

Company	Well No.	Location	Depth	Init. Prod.
Franklin	1	SW SE 18-4-4 E	T.D. 3505	Dry

Kay County

Company	Well No.	Location	Depth	Init. Prod.
Riley	1	SE NE 9-26-1 E	220-225	.1M

Kiowa County

Company	Well No.	Location	Depth	Init. Prod.
Blue Mountain	1	SE NW NW 17-5-14 W	T.D. 625	Dry

Muskogee County

Company	Well No.	Location	Depth	Init. Prod.
Sterling	2	SE NW NE 1-14-18	T.D. 880	Dry

Okfuskee County

Company	Well No.	Location	Depth	Init. Prod.
Josey	20	CNL NW SW 33-12-11	3636-3700	300

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Lampton	1	NW NE SE 20-15-13	T.D. 2550	Dry
Decius et al.	1	NW 12-15-14	T.D. 780	Dry
Smith	1	SE NW SE 12-15-14	T.D. 800	Dry

Osage County

Company	Well No.	Location	Depth	Init. Prod.
Marland	2	NE 34-25-9	T.D. 714	Dry
I. T. I. O.	272	NW SW NW NW 35-25-11	T.D. 1943	Dry
I. T. I. O.	394	NW NE NW 7-24-9	T.D. 849	Dry
Branstetter et al.	1	SW NW 14-22-11	T.D. 1879	Dry
Kewanee	7	SW NE SW 34-27-6 E	2778-2834	30
I. T. I. O.	396	NE NW 15-27-10	2299-2302	1¼M
Empire	1	SE NE 15-26-6	2948-2985	153 (18 Hrs.)
Peters	5	CNL N½ SW 26-25-9	2115-2146	135 (20 Hrs.)
Moore-Ohio Osage	7	CNL N½ SW 9-21-9	410-420	5

Pawnee County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	1	SE NE NW 15-20-6 E	3115-3125	10
Garber-Pulse	2	SW SE 27-23-4 E	T.D. 3539	Dry

Payne County

Company	Well No.	Location	Depth	Init. Prod.
Pure	1	SE NE 7-18-4 E	4161-4197	235

Pontotoc County

Company	Well No.	Location	Depth	Init. Prod.
Homaokla	12	NE NW NE 17-5-8 E	2614-2626	360

Pottawatomie County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	1	SW NW 12-7-4 E	4260-4466	47
Darby	1	SE NE SW 23-7-4 E	4222-4265	191
Superior	2	SW NW NW 24-7-4 E	4160-4427	108
Westheimer-Daube	3	SW NW 24-7-4 E	4482-4492	80
McCullough	2	NW SW NE 25-7-4 E	4388-4408	200
Sinclair	1	NE NW SW 25-7-4 E	4200-4225	2280
Independent	1	NW NE SE 19-7-5 E	4165-4190	20426
Slick	2	SE NW SE 19-7-5 E	4106-4135	7750
Magnolia	1	NE SE SW 17-7-5 E	T.D. 4537	Dry

Stephens County

Company	Well No.	Location	Depth	Init. Prod.
American Pipe Line	2	NE SW 31-1-8 W	T.D. 2615	Dry
Clark-Cowden	2	NW SE 31-1-8 W	T.D. 1920	Dry
Faucett-Holmes	1	NW SE SW 18-1-8 W	T.D. 2510	Dry OWD
Pace et al.	8	NW SE NE 12-2-8 W	1569-1571	110
Magnolia	1	SW 17-1-8 W	1923-1975	10
Heydrick et al.	1	SW 35-1-8 W	1650-1679	20

Seminole County

Company	Well No.	Location	Depth	Init. Prod.
Anderson-Pritchard	5	NE NW SE 18-5-8 E	2510-2615	850
Homaokla	5	NW SE NE 19-5-8 E	2662-2677	265
Westheimer-Daube	3	NE SW NE 19-5-8 E	2553-2595	450
Mid-Continent et al	1	SE 32-10-6 E	4310-4330	1260
Gypsy	10	NE SE SE 1-9-5 E	4400-4408	555
Gypsy	11	NW NE SE 1-9-5 E	4370-4389	2525
Sinclair	4	NW SE NE 2-9-5 E	4287-4310	350 (12 Hrs.)
Magnolia	5	SW SE SW 12-9-5 E	3455-3458	28
I. T. I. O.	1	SE NE 10-8-5 E	4207-4212	490
Marland	1	NE SE SW 7-8-6 E	4413-4421	700
Blackwell	4	NW SE 11-7-6 E	4150-4174	4750
Carter	1	SE NE NW 11-7-6 E	4201-4229	2470 (14 Hrs.)
Roxana	3	SW NW 13-7-6 E	4265-4390	5044
Gypsy	4	SW SE 14-7-6 E	4202-4207	6112
Gypsy	5	SE 14-7-6 E	4364-4367	5200
Independent	2	SW NE SE 14-7-6 E	4193-4203	6205
Reiter-Foster	2	NW SW 14-7-6 E	4253-4265	3600
Barsndall	2	NE SE 22-7-6 E	4171-4184	3415
Gypsy	1	NW SW 23-7-6 E	4334-4342	1802
Pure	1	NE 23-7-6 E	4295-4304	4010
Slick	1	SW NE SW 1-6-6 E	2760-2775	10
Mid-Continent	8	NE SW SE 7-5-8 E	2660-2767	600 OWD

Tulsa County

Company	Well No.	Location	Depth	Init. Prod.
Altitude	4	NW SW SW 30-19-13	T.D. 2037	Dry

Wagoner County

Company	Well No.	Location	Depth	Init. Prod.
McAdams-Ford	1	CWL NW NW 3-16-18	T.D. 600	Dry

KANSAS

Butler County

Company	Well No.	Location	Depth	Init. Prod.
Durham-Work	1	NW SW NW 17-29-4 E	1875-1878	10
Rosenthal et al.	1	NW NE NW 10-27-6 E	3132-3137	200
Mohawk	3	SEc NE 6-27-6 E	2724-2764	500
Mohawk	4	NEc SE 6-27-6 E	2719-2756	600

Cowley County

Company	Well No.	Location	Depth	Init. Prod.
Lewis Prod.	1	NE SE SW 30-31-6 E	2948-2960	20
Barnsdall	2	NW SE NE 7-33-3 E	3491-3494	100
Barnsdall	1	SE SW SE 6-33-3 E	T.D. 3605	Dry
Kentucky Nitro & Oxyg.	1	NE SE SW 7-33-3 E	T.D. 571	Dry

Elk County

Company	Well No.	Location	Depth	Init. Prod.
Phoenix	1	SE SW NE 10-30-10 E	1956-1978	12
Denman Bros.	4	NE SW SE 35-31-10 E	1989-2020	.6M

Greenwood County

Company	Well No.	Location	Depth	Init. Prod.
Pryor et al.	1	SWc NW 29-22-13 E	1659-1692	50
Simmons-Rhodes	5	NEc SE 30-22-13 E	1645-1697	300
Skelly	5	SEc NE 30-22-13 E	1634-1693	300
Kansas Oil Corp	1	SWc NE 6-25-9 E	2195-2208	85
Mendenhall et al.	1	C NE SW 5-25-13 E	T.D. 1702	Dry

Rooks County

Company	Well No.	Location	Depth	Init. Prod.
Stearns Streeter	1	NWc NE 14-9-16 W	T.D. 3620	Dry
Phillips	1	NEc NW 14-9-16 W	3260-3289	40

Sumner County

Company	Well No.	Location	Depth	Init. Prod.
Amerada	11	NWc NE SE SW 14-32-2 E	1625-1645	200
Barnsdall et al.	10	NEc SW NW NW 23-32-2 E	1989-2108	300
Endfield-Foster	1	C NE SW 1-34-2 E	T.D. 3864	Dry

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended August 25, 1928

OKLAHOMA

Caddo County

Company	Well No. Farm	Location
English Drlg.	4-Gafney	NEc NW SE 31-6-9 W

Carter County

Company	Well No. Farm	Location
Magnolia	1-Martin	NW SE 23-1-3 W

Cotton County

Company	Well No. Farm	Location
Exerts	1-Indian	NE 11-5-13 W

Creek County

Company	Well No. Farm	Location
Sand Springs Home	1-Atkins	SW NE 5-18-7 E
Dengal	6-Tiger	SE NW SW 17-17-7 E
Transcontinental	2-Sharper	NW SW SW 27-16-9 OWD
Riverland et al.	1-Simopoke	SE NE SE 9-16-12

Grady County

Company	Well No. Farm	Location
Henry	1-Rider	SE NW 4-5-8 W
Magnolia	2-Smith	NE 35-5-8 W
Watchorn	1-Woods	SW 12-4-8 W

Grant County

Company	Well No. Farm	Location
Consolidated Gas Utilities	1-Forsythe	NE NW 2-27-3 W

Jefferson County

Company	Well No. Farm	Location
Bunn-Marvin Drlg.	2-Smith	NE SE NE 24-7-6 W
McGinley et al.	3-Pifle	NW 20-7-5 W

Kay County

Company	Well No. Farm	Location
Lario	1-Stalnaker	NW NE 14-29-1 E

Muskogee County

Company	Well No. Farm	Location
Williams	3-Lewis	SW NW NE 17-15-17
Tillman	1-Callahan	CEL SE SE 1-14-18

Okfuskee County

Company	Well No. Farm	Location
Atlantic	2-Wind	SW NE 35-11-9
B&B Drlg.	1-Morrow	NW SE 4-11-11

Okmulgee County

Company	Well No. Farm	Location
Curtis et al.	1-Stepney	SW SE 1-15-12
Garrett et al.	2-Madigan	SW SE NW 30-14-11

Osage County

Company	Well No. Farm	Location
Lewis Prod. et al.	2	NW NE NE 22-26-6
Osage	391	SW NE NE 32-24-12
Silurian	3	NW SE SE 12-23-11
Devonian	1	C SW 30-21-10

Pawnee County

Company	Well No. Farm	Location
Black et al.	5-Cotton	CSL SE NE 6-20-8 E

Pontotoc County

Company	Well No. Farm	Location
Louisiana	15-Perry	SE NW NE 19-5-8 E

Pottawatomie County

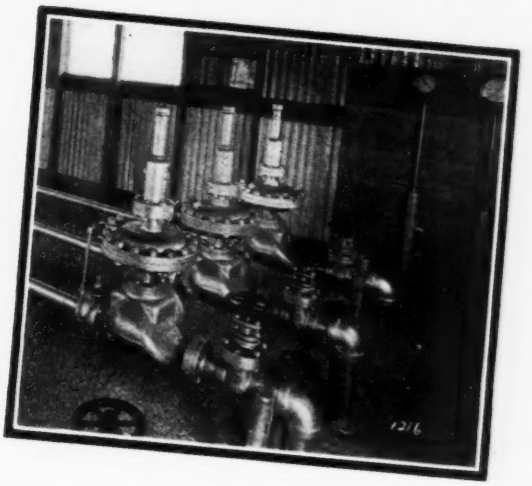
Company	Well No. Farm	Location
Gypsy	3-Stahl	SW SE NE 30-7-3 E
Home	1-Townsite	CNL N½ NE 14-7-4 E
Sinclair	8-Blandon	NW NE SW 24-7-4 E
Sinclair	9-Blandon	SE NE SW 24-7-4 E
Sinclair	10-Blandon	NE SE SW 24-7-4 E
Sinclair	11-Blandon	SW SE SW 24-7-4 E
Sinclair	2-Coley	NE SE SE 24-7-4 E
Westheimer-Daube	5-Freid	SW SE NW 24-7-4 E
Sinclair	3-Neeley	SE NW SW 25-7-4 E
Sinclair	1-Neeley	NW SE SW 25-7-4 E
Texas	2-Cherry	SE NW NW 25-7-4 E
Champlin	1-Harber	SW NE SW 14-7-5 E
Independent	7-Youts	NE SE SE 19-7-5 E
Independent	8-Youts	SE NE SE 19-7-5 E
Sinclair	6-Kitchee	NE NW SW 19-7-5 E
Magnolia	3-Youts	NW SW SW 20-7-5 E
Magnolia	4-Youts	SW NW SW 20-7-5 E
Magnolia	5-Youts	SE SW SW 20-7-5 E
Barnsdall	3-Stahl	NE SW NE 30-7-5 E
Phillips	4-Stahl	SE NW NE 30-7-5 E

Seminole County

Company	Well No. Farm	Location
Slick	1-Chisholm	SW NW 22-10-7 E

(Continued on Page 48)

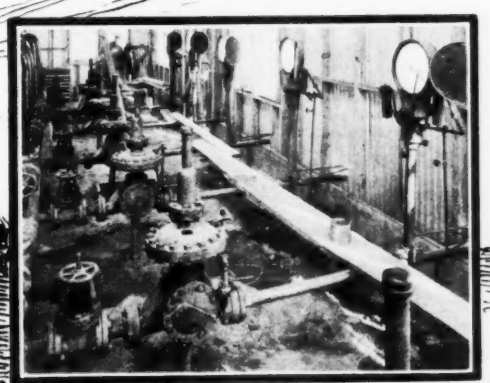
5 Batteries of Emco Flow Controllers

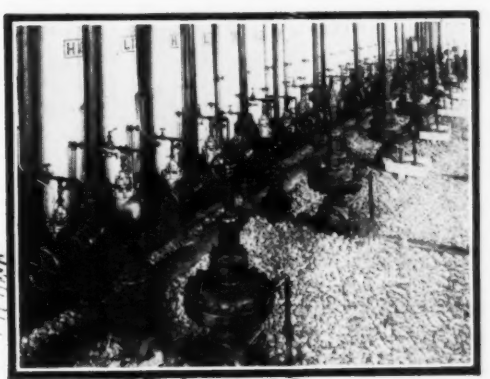


EMCO Regulation developed during 30 years of close contact with the Natural Gas Industry was the logical resource of the Oil Industry with the development of the Air Lift Process of Oil Production.

EMCO accuracy, ruggedness and design principles were from the beginning appreciated by the oil operators as witnessed by the large number of EMCO Flow Controller Installations found in the oil fields of America and other producing countries.

We are illustrating here several very successful installations of this type of equipment.





PITTSBURGH EQUITABLE METER COMPANY

MAIN OFFICE AND WORKS PITTSBURGH, PA.

NEW YORK CHICAGO COLUMBIA, S.C. LOS ANGELES DALLAS TULSA SEATTLE KANSAS CITY SALT LAKE CITY

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended August 25, 1928 (*Continued from Page 46*)

Company	Well No. Farm	Location	
Burke-Greis	2-Wisner	NW SW NE 6-9-6 E	
Slick et al	1-Campbell	SE NW 6-9-6 E	
Slick et al	2-Campbell	NE SE NW 6-9-6 E	
Slick et al	3-Campbell	SW NW NE 6-9-6 E	
Independent et al	4-Davis	SW SE 2-7-6 E	
Carter	2-Moore	SW NE NW 11-7-6 E	
Magnolia	3-Denby	NW SE NW 11-7-6 E	
Sinclair	1-Blanton	SE SW NW 11-7-6 E	
Carter	2-Wilson	NW SW SW 12-7-6 E	
Blackwell	4-Talley	SE SW SW 14-7-6 E	
Gypsy	4-Cannard	NW NE NE 22-7-6 E	
Slick	1-Mingo	NW NE 25-6-6 E	OWD
Roxana	1-Whitney	SW SE SW 1-5-7 E	
Mid-Continent	1-Harjo	SE NE NE 14-5-7 E	OWD
Sinclair	2-Nakotche	CEL NE SW 18-5-8 E	
Sinclair	3-Nakotche	SE NE SW 18-5-8 E	
Sinclair	4-Nakotche	NW NE SW 18-5-8 E	
Stephens County			
Magnolia	3-Thomas	SE 25-1-9 W	
Stahl-Burris	1-Jefferson	SE NE NW 2-1-7 W	
Pace et al	1-Massey	NW NE 12-2-8 W	
Tulsa County			
Mays Drlg. et al	1-Fulsom	NW SE NE 24-19-11	
KANSAS			
Butler County			
Pure	6-Maxwell	NEc SW 31-24-4 E	
Empire	2-Sharrick	SW NW SE 27-27-5 E	
Empire	3-Hutchison	SW NW NE 27-27-5 E	
Rosenthal et al	2-Marshall	SW NE NW 10-27-6 E	
Coffee County			
Union Gas	1-Mitchell	C SW NE 8-22-14 E	
Sheedy et al	1-Olinger	SE SW NW 11-23-13 E	
Ellis et al	1-Rosalin	C S½ SW 6-23-15 E	
Jones et al	1-Barngover	NW NE SW 7-23-15 E	
Cowley County			
Barnsdall	1-Clabough	NEc 19-31-5 E	
Foster et al	1-Day	C SE NW 24-34-6 E	
Elk County			
Derby	1-Rhudy	SW NW SW 4-31-10 E	
Greenwood County			
Simmons et al	1-Hinds	SEc NW 2-22-11 E	
Sheedy et al	2-Green	NWc 12-23-9 E	
Ritchie-Moore	1-Marshall	NEc NW 33-24-9 E	
Sheedy et al	1-Grossarth	SEc SW 12-25-12 E	
Marion County			
Empire	1-Seibel	SWc SE 28-20-2 E	
McPherson County			
McPherson	1-Norlins	C NE 9-17-2 W	
McPherson-Roxana	1-Stein	C SW 17-18-1 W	
Phillips County			
Watsonion	1-Merklein	NEc SW 21-3-19 W	
Rush County			
Sinclair	1-Beeching	NW NE NW 9-16-16 W	
Sumner County			
National Union	1-Townlot	Lot-4, Blk-18, 14-32-2 E	OWD
Roxana	1-Barnes	NEc SW SW 14-32-2 E	
Roxana	3-Scroggins	NEc SE SE NW 14-32-2 E	
Lario	1-Jones	SWc NE 13-25-2 E	
Woodson County			
Oko Oil Co	2-Otto	NE NW NW 21-23-14 E	

TEXAS

NORTH AND NORTH CENTRAL

				Survey
Anderson County				
Humble	2-Mandelston	.....		Roberts
Archer County				
Shappell	1-Kemp	Blk-76		KWVFL
Stumpf-Hines	2-Wallace	League-3, Blk-11		DCSL
Arco	7-Perkins	League-3, Blk-14		DCSL
King Royalty	4-Rogers	Sec-1600		TE&L
Gulf Prod	3-Hayter	Sec-2409		TE&L
Brown et al	1-Dempsey	League-3, Blk-10		DCSL
Consolidated et al	1-Neimeyer	Sec-2415		TE&L
Brown County				
Burris et al	7-Newton	Blk-151		Curlong
Shelton et al	2-Hamilton	Blk-291		English
Cranfill-Reynolds et al.	1-Suttles	Blk-140		Mitchell
Kerr et al	2-Boyson	.....		Mullens
Ditto	5-Richardson	.....		SA&MG
Gilman-McMurray et al.	18-Teston	Blk-155		Smith
Gilman-McMurray	5-Hickman	Blk-783		Benson
Anna Belle	10-Hickman	Blk-801		McGloin
Paugh-Switzon	1-Gentry	Blk-145		Beall
Kone Prod	1413-Hickman	Blk-783		Benson
Spence	1-Brown	Sec-36, Blk-275	Kerr Co. Sch. Ld.	
Olvery-Robins	1-Nash	Blk-1		CEPI&M
Diggs	5-Eack	Blk-636		Day
Amerada	1-Wise	.....		Montez et al.
Jackson et al	1-Pierce	Blk-44		Baze
Midland	9-Butler	Blk-783		Benson
Anna Belle	2-Butler	Blk-783		Benson
Burnet County				
Clark	1-Warden	.....		Reevger
Coleman County				
Simpson et al	1-McClure	Blk-496	Wharton Co. Sch. Ld.	
Owens	1-Henderson	Blk-168		Wickson
Humphrey Bros. et al.	2-Mathews	Blk-43		Ragnet
Continental et al	1-Overall	Blk-700		Barkley
Continental et al	1-Hinds	Sec-9, Blk-1		GH&H
Eastland County				
Lewis et al	3-Johnson	Sec-11, Blk-4		H&TC
Goodwin et al	1-Parker	Sec-16		Van Norman
Belva	4-Goode	.....		Stubblefield
Chestnut-Smith	1-Alexander	Sec-62, Blk-4		H&TC
Eastland	1-Minchell	Sec-385		SP
Goodwin et al	1-Boweland	.....		Van Norman
Harbin	1	Sec-27, Blk-2		H&TC
Panhandle	28-Hightower	.....		Van Norman
Schimmill Prod	1-Brewer	.....		Finley
Erath County				
Eastland	1-Smith	.....		Stubblefield
House et al	1-Fulfer	Blk-290		Goff
Peters et al	1-Davis	.....		Goff
Peters et al	1-Barton	.....		Kelly
Henderson County				
McElreath et al	1-Schoelkoff	.....		Mitchell
Haynes et al	1-Tarkington	.....		Patton
Howard County				
Magnolia	5-Roberts	Sec-136, Blk-29		W&NW
Hood County				
Sampson	1-Joliff	Harper No. 255		449
Jones County				
Pandem	1-Cox	Sec-43, Blk-14		T&P
King County				
Humble	1-Pitchfork	Sec-171		Gibson
Palo Pinto County				
Thompson et al	1-Dalton	Abst.-891		West
Shackleford County				
Atlantic et al	1-Reynolds	Sec-25, Blk-11		T&P
Cranfill-Reynolds	1-Davis	Sec-33, Blk-13		T&P
Harris et al	1-Mathews	Sec-57		ET
Roeser-Pendleton	74A60-Cook	Sec-60		ET
Roeser-Pendleton	75A60-Cook	Sec-60		ET
Roeser-Pendleton	76A60-Cook	Sec-60		ET
Roeser-Pendleton	77A60-Cook	Sec-60		ET
Roeser-Pendleton	6A61-Cook	Sec-61		ET
Roeser-Pendleton	7A61-Cook	Sec-61		ET
Roeser-Pendleton	8A61-Cook	Sec-61		ET
Roeser-Pendleton	9A61-Cook	Sec-61		ET
Roeser-Pendleton	6A62-Cook	Sec-62		ET
Roeser-Pendleton	1A145-Cook	Sec-145		ER
Roeser-Pendleton	21C60-Cook	Sec-60		ET
Roeser-Pendleton	22C60-Cook	Sec-60		ET
Roeser-Pendleton	23C60-Cook	Sec-60		ET
Smith County				
Gulf Prod	3-McCammond	.....		Moore
Stephens County				
Hagaman	1-Hagaman	Sec-2, Abst-2521		Chamblias
Hichock Prod. & Dev.	2-Hamil	Sec-5		LAL
Wichita County				
Magnolia	3-Kemp et al.	Sec-27, Blk-1		KWVFL
Magnolia	4-Kemp et al.	Sec-27, Blk-1		KWVFL
Bridwell et al	3-Womac	Abst-796		GC&SF
Wilbarger County				
Gatewood et al	1-Waggoner	Sec-8, Blk-3		H&TC
Fain-McGaha	13-Waggoner	Sec-24, Blk-4		H&TC
Consolidated	1-Waggoner	.....		Calhoun
Freeman-Hampton et al.	1-Waggoner	.....		Calhoun
Baker et al	3-Waggoner	Abst-461		Purnell
Waggoner	8-Waggoner	Sec-80, Blk-4		H&TC
Ramming et al	1-Waggoner	Sec-22, Blk-4		H&TC
Steidaman et al	1-Waggoner	Sec-9, Blk-4		H&TC
Ancill	1-Fee	Sec-2, Blk-7		H&TC
Lewis Prod	1-Waggoner	Sec-18, Blk-4		H&TC
Phillips	2-Norwood	Sec-18, Blk-4		H&TC
Young County				
Christie Bros	1-Hatfield	Abst-169		Kitch
Lindsay Drlg	2-Craig	Abst-246		Ross
Panhandle	1-Bulloch	Abst-138		Hamilton
Panhandle	1-Morrison	Sec-465		TE&L
Paul et al	1-Thompson	Sec-2692		TE&L
Texas-Pacific	6-Donnell	Sec-1211		TE&L
Sun	3-Davis	Abst-1593		Davis
Republic Prod	1-Haygood	Sec-1468		TE&L
Hamilton et al	1-Willard	Sec-227		TE&L
Johnston	1-Garvey	Sec-1858		TE&L
Greath-Kell	1-McBrayer	Sec-1904		TE&L
Franklin et al	1-Porter	Abst-1393		Cantwell
Stafford	1-Wallace	Abst-274		Tynes
Ellis	1-Alexander	Sec-1, Abst-40		BS&F
Smith et al	1-Davis	Sec-4		GB&N
Kleiner-West et al	1-Davis	Sec-1487		TE&L
Williams	1-Newman	Abst-252		Sallie
Magnolia	1-Johnson	Blk-13, Abst-253		Sergeant
Kleiner-West et al	19-Langston	Sec-1490		TE&L
Rowe et al	1-Lowe	Sec-59		TE&L

WEST TEXAS AND PANHANDLE

				Survey
Carson County				
Beaudoin et al	1-Barnard	NEc SE Sec-23, Blk-4		I&GN
Gray County				
Collins et al	1-Bull	Sec-3, Blk-B-2		H&GN
Magnolia	3-Bowers	Sec-63, Blk-B-2		H&GN
Ray-Massie	3-Chapman	Sec-51, Blk-25		H&GN
Skelly	1-Bull	Sec-2, Blk-B-2		H&GN
Howard County				
Merrick-Lamb	5-Clay	Sec-126, Blk-29		W&NW
Sun	3-Settles	Sec-135, Blk-29		W&NW
Schermerhorn	2-Roberts	Sec-137, Blk-29		W&NW
Smith et al	1-Eason	Sec-6, Blk-32		T&P
Owen-Sloan	7-Roberts	Sec-136, Blk-29		W&NW
Pecos County				
Mid-Kansas et al	6-Yates	Sec-32, Blk-194		GC&SF
Mid-Kansas et al	5-Yates	Sec-32, Blk-194		GC&SF
California	2-Smith	Lease-1, Sec-23, Blk-194		GC&SF
Mid-Kansas et al	4-Yates	Sec-32, Blk-194		GC&SF
California	1-Tippet	Lease-1, Sec-2		Robertson
March-Kruger	1-Holmes	Sec-5, Blk-178		TC
Wheeler County				
Hartell et al	1-Turnbow	Sec-53, Blk-17		H&GN
Winkler County				
Humble	6-Hendricks	Sec-39, Blk-26		PSL
Southern Crude	T-88-A5-Hendricks	Sec-44, Blk-26		PSL
Southern Crude	T-88-U4-Hendricks	Sec-41, Blk-26		PSL
Culberson Bros	1-Hendricks	Sec-30, Blk-B-5		PSL
Southern Crude	T-88-15-Hendricks	Sec-30, Blk-B-5		PSL
Southern Crude	T-88-16-Hendricks	Sec-30, Blk-B-5		PSL
Southern Crude	T-88-S1-Hendricks	Sec-34, Blk-26		PSL
Humble	15-Hendricks	Sec-41, Blk-B-5		PSL
Bloin	2-Brown et al.	Sec-4, Blk-B-5		PSL

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Hundreds of Millions Already Spent In West Texas Basin

By Paul Wagner
N. P. N. STAFF WRITER

Article 3

IT IS impossible to translate into terms of money all that oil development in West Texas has meant. One may estimate with a fair degree of accuracy the cost of wildcat acreage, the expense of drilling wells and the financial outpour incident to major pipeline construction. These are obvious, but what of the others?

Neither you nor I, nor yet the operating companies, know what toll of costs the pioneering of this vast petroleum empire has taken, or will take.

Any number of intangible expenses appear for consideration when one attempts a study of total costs.

They range all the way from major construction projects to the maintaining of car expense, not the least of which includes the thousands of tires that are literally burned up each year by scores of scouts and geologists.

The primary cost of investigation work, whether charged into general overhead or against operations in a specific territory, represents money spent in the region explored. It never can be fitted concretely into such a discussion as the present article. Yet, distributed through geology, scouting, land work and other phases of the industry, the toll will represent millions of dollars.

Exploratory work does not end with a first general reconnaisance, but grows steadily into vast proportions as leasing and development call for sub-surface geology and the expansion of scouting into wider areas.

At the beginning of the present year, 17 principal companies operating in the West Texas Permian salt basin region held 6,665,770 acres of leaseholds estimated to have cost them an average of $5 an acre bonus, or $33,328,850.

The scores of smaller interests holding wildcat acreage, and in some cases developing proved ground, would increase the leasehold totals and the expenditures of bonus money materially.

More than $75,000,000 has been expended in the drilling of around 1650 producing oil wells and approximately 1100 dry holes in the West Texas salt basin. Perhaps the total is closer to $100,000,000. The figures used are, however, intended only to represent actual drilling and equipment costs.

Transportation is both a variable item and an expensive one in the region. Except in proved territory, where development is carried forward steadily, road conditions and the remote locations of tests make transportation an important separate item in attempting to average salt basin operating costs.

The writer estimates that the roundly 1000 deep line (2800-3000-foot) producing wells in West Texas cost their owners $35,000,000 to drill and equip, an average of $35,000

Transportation of equipment is mainly by mule-power or with horses in the sand dune areas of west Texas oil fields. The picture shows "8-up" moving pipe to Humble Oil & Refining Co.'s Walton "B" lease, east side of Winkler field

Patent Situation on Sand Testing Tools

Do not be disturbed by the threatening infringement notices being broadcast by certain of those engaged in the testing of oil wells. The United States Patent Office has not as yet issued a patent on the method and apparatus first introduced by Halliburton about three years ago and no one but Halliburton has any moral right to use the same.

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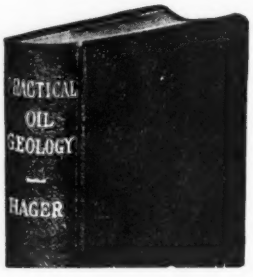

Practical Oil Geology

Dorsey Hager, petroleum geologist and engineer, has just come out with his new fourth edition of PRACTICAL OIL GEOLOGY.

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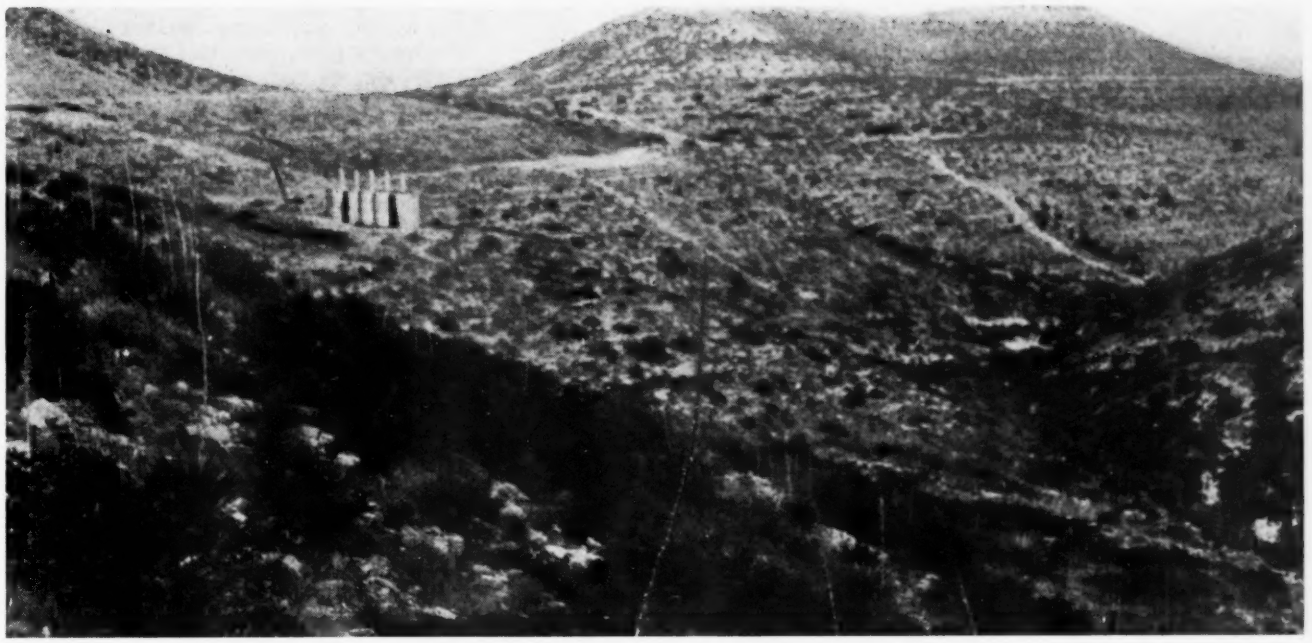

A scene in the Yates field, Pecos county, West Texas. The absence of derricks is accounted for by the fact most of the drilling is with portable drilling machines, the well-head connections are the only equipment left on the ground after a well is completed

each, without taking transportation expense into account.

The 1100 dry holes, both shallow and deep, he estimates to have cost roundly $30,000,000, or about $27,270 each. The lower net average estimated cost of dry holes reflects salvage allowances and the lack of necessity for well-head equipment. But it may be too low.

About 650 shallow producing wells in the salt basin region, ranging in depth from 1000-2200 feet, are estimated to have cost an average of $15,000 each, or nearly $10,000,000. Some of the deepest wells of this group were drilled relatively cheaply because of being put down with only two casing strings, in the McCamey district of Upton county and the Chalk area of Howard county. Some of the shallowest, the 1000-1650-foot wells in the Yates field of Pecos county, were relatively expensive to drill because of hard rock formations near the surface and because of the necessity for blasting roads out of the faces of canyon walls to reach locations.[1]

An earlier article of the present series[2] lists the number of West Texas salt basin wells productive by counties, July 21, 1928, with their daily average production as of that date and their cumulative production to July 1, 1928.

In studying costs it will be found interesting to note that, of the total oil produced in the fields mentioned, exceeding 135,000,000 barrels, less than 30,000,000 barrels consists of storage stocks in the region. The other 105,000,000 barrels total was moved out as required for crude consumption under the policy of not building up greater stocks of sulfur crude than necessary.

The foregoing means that over the whole of the salt basin area total crude stocks represent about 75 per cent of the 42,000,000 barrels of steel storage room constructed since the first "gusher" oil of the Permian basin was found in the Big Lake field of Reagan county in the spring of 1923.

It is estimated that the 42,000,000 barrels of tankage provided in the region cost 40 cents a barrel to construct, or roundly $16,800,000. The building of storage and the stocking of crude for the first year is estimated by one of the leading West Texas companies, based on its own experience, to cost 64 cents a barrel, or 1 cent less per barrel than the present posted price of sulfur crude at the well.

More than half the total stocks in West Texas consist of Winkler crude[3] stored in the period immediately preceding the prorating of production, May 5, by order of the Railroad Commission of Texas. To the roundly 15,000,000 barrels of Winkler stocks may be added 9,571,650 barrels of Crane county crude in storage July 1, leaving only about 5,000,000 barrels scattered storage elsewhere in the region.

The eight major pipelines built, or building, from West Texas[4] will represent investment of more than $75,000,000 when their construction has been completed. Eventually others will be built, including perhaps the proposed system of the Transcontinental Oil Co., from Yates field to the Gulf Coast, and probably the Sinclair-Standard of Indiana trunk,[5] linking West Texas with enlarged facilities from the Mid-Continent to the Chicago district. These projects, if put through, will add at least another $25,000,000 to the pipeline construction programs necessitated by salt basin development.

The end is not yet. Proved and semi-proved ground in West Texas fields under development totals less than 50,000 acres. As frequently pointed out in these columns by the writer the salt basin area extends 500 miles from east to west

Acreage Holdings

WEST TEXAS division of the salt basin acreage holdings, Jan. 1, 1928:

Company	Total Acres
Atlantic Oil Producing Co.	159,879
Dixie Oil Co., Inc.	235,345
Empire Gas & Fuel Co.	75,000
Gulf Production Co.	828,132
Humble Oil & Refining Co.	1,742,000
Magnolia Petroleum Co.	452,274
Marland Production Co.	737,843
Mid-Continent Petroleum Co.	55,835
Pure Oil Co.	345,798
Prairie Oil & Gas Co.	98,589
Republic Production Co.	233,860
Roxana Petroleum Corp.	349,560
Sinclair Oil & Gas Co.	132,615
Sun Oil Co.	385,208
California Co.	293,745
Vacuum Oil Co.	37,480

1—NATIONAL PETROLEUM NEWS, page 22, Feb. 15, 1928

2—NATIONAL PETROLEUM NEWS, page 19, Aug. 15, 1928.

3—NATIONAL PETROLEUM NEWS, page 27, Aug. 1, 1928.

4—NATIONAL PETROLEUM NEWS, page 21, July 4, 1928.

5—NATIONAL PETROLEUM NEWS, page 17, July 25, 1928.

Deep ruts in the sand mark this principal "highway" north of the Winkler county, Texas, oil field into Lea county, New Mexico

and 600 miles from north to south in west Texas and Southeastern New Mexico.

Within that entire basin oil possibilities exist wherever lime ridges or sub-surface "blisters" provide collecting places for accumulations under proper conditions of porosity. Being a basin and, therefore, structurally low in a regional sense, the Permian area of Texas and southeastern New Mexico was once considered the "graveyard of petroleum" in the southwest. Now that it has been proved productive, the region assumes a scope of fruitful opportunities equalling, in contrast, the direst disappointments originally believed to be in store for anyone intrepid enough to explore it.

In this connection it is of interest to study the figures showing acreage holdings in the west Texas division of the salt basin, Jan. 1, 1928, which are appended. A similar recapitulation has not been possible in Lea and Eddy counties, southeastern New Mexico, but the Marland Production Co. alone holds approximately 400,000 acres there.

Although considerable acreage disproved by drilling in adjacent territory has been released to the landowners, to avoid further rental payments, companies operating in the territory have been acquiring other leaseholds. This is made necessary by showings in test wells and fresh geological discoveries, notwithstanding that wholesale purchases of leases have been frowned upon in the last year and a half.

Take this turnover into account, allow $10,000,000 rentals annually to defer drilling on commercial leases, figure in what general expense and overhead you will, allow for scouting and geological work, then sum up the more concrete figures contained in this survey. It will be found that West Texas investment, because of oil, has been somewhere between $300,000,000 and $500,000,000 in the last five years.

With the area as a whole barely scratched it may be safely said that the salt basin region bears to petroleum today such a relation as Oklahoma did before Cushing turned its then phenomenal outpour on an astounded industry.

What has come since Cushing in Oklahoma may be, conceivably, duplicated in a broad look into the future of West Texas.

As pointed out in the first article of the present series, the explanation of this region's transformation from bleak, mesquite-covered sand dunes and seemingly impenetrable clouds of dust to an area of industrial importance is summed up in the simple statement—

THERE IS OIL THERE.

Attorney General Studies Royalty Oil Contract

WASHINGTON, Aug. 24.—Attorney general Sargent, at the request of the Department of the Interior, is considering the legality of the contract whereby Sinclair Crude Oil Purchasing Co. is buying the government's Salt Creek royalty crude. L. L. Marcel, president of the White Eagle Oil & Refining Co. is represented as questioning, if not actually denying the legality of a contract made by Secretary Fall in 1923 as extended by the exercise of an option by the purchasing company, for five years from Jan. 1, 1928.

The precise question is as to whether the option was legal. If it was not, then, obviously, exercise of it did not extend the contract itself. All the law officers of the Department of the Interior have ruled that the option is legal and exercise of it by the Sinclair company extends the contract for the five-year period. The general thought among those who have gone into the question is that the attack goes more to the wisdom than to the legality of the contract.

But the contract was made on the basis of competitive bidding. The Mammoth Oil Co., organized to drill the Teapot Dome and provide a pipe line from the Wyoming and Montana oil fields to the Missouri River, made the highest bid. The contract was transferred to the Sinclair company. About 20,000,000 barrels have been taken under it. The government has received something like $34,000,000 for its royalty oil—50 cents a barrel more for it than if the Teapot Dome contracts had not been made. The pipe line brought the northern oil up to the Mid-Continent price level.

Questions about the validity of the option were raised last fall by J. A. Phelan who later brought W. G. Williams of New York into the matter. The Department of the Interior gave them unlimited license to show why the option, which H. T. Phillips, president of the Sinclair, in June, 1927, notified the Department of the Interior would be exercised, was illegal. Rather insistent letters were written by the department that Phelan and Williams go forward with their allegations of illegality.

What they were able to bring forward did not convince any of the lawyers to whom the matter was submitted that there was any doubt about the obligation of the United States to renew the contract which was entered into after every one interested had had an opportunity to bid, with knowledge of the option and in the light of it.

Secretary Work, now chairman of the Hoover campaign committee made public everything in connection with the matter, last January, including the correspondence urging Phelan and Williams to make good on their declarations that the contract should not be renewed. The department considered the matter even after the dates for presenting papers in the case had passed.

He said, at the time, he would ask the opinion of the attorney general on the matter so as to have the backing of that official for the officials of his own staff who could see no way for the government to back out of the contract, even if it were established that calling for new bids would result in the government obtaining more money for its crude.

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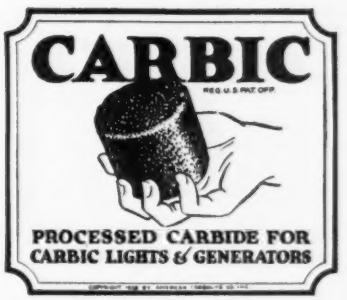

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H. B. Bernard **515.7 775.**

"Gas Lift and Repressuring in Relation to Natural Gasoline Recovery"

National Petroleum News, May 23, 1928. pp. 97-101.

This paper, presented before the annual meeting of the Natural Gasoline Association of America, stresses the economic aspects of producing natural gasoline as a by-product of the gas lift plant. It is pointed out that much of the depression of the gasoline industry is due to the overproduction of gasoline made only as a by-product. Answering a series of questions Mr. Bernard champions central gas lift plants against the portable compressors, suggesting that the latter be used only as kick-off units. He answers the objections of pressure drops and variations in pressures needed. Gas is asserted to be better than air for lift operations.

J. C. Chatfield **773.16**

"Unit Plan Allows Changes in Gasoline Plant Without Shutdown"

National Petroleum News, Apr. 25, pp. 81-82.

This article describes the unit plan of absorption plant developed by the Roxana Petroleum Corp., which enables the company to expand or reduce the size of its plants without disturbing other units or shutting down even temporarily. The unit idea is carried down to the fine point of providing individual water circulating pumps for each compressor and individual hot wells. A unique exhaust system at the plant is described, which pulls hot air and gases from the compressor room through the ducts to lessen explosion hazards and keep compressor room temperatures lower. A description is given of a rerun steam still built at the plant of excess material.

Gustav Egloff and C. D. Lowry, Jr. **724.**

"Why Worry About Sulfur in Gasoline in Summer—It's Harmless Then"

National Petroleum News, Aug. 15, 1928, pp. 59-64.

This study presents an analysis of gasoline consumption in relation to temperature and urges the need for a "rational" attitude toward sulfur in gasoline. It reveals the fact that over 8 billion gallons of gasoline, more than two-thirds of the country's total consumption are used in warm weather when, according to all published evidence, there is no danger of corrosion. The authors go on to say: "It seems absurd to refine this huge amount of gasoline to conform to an arbitrary sulfur specification which in most states throughout the greater part of the year appears to be worthless and to serve only to necessitate wasteful refining practices.

"We urge consideration of the only reasonable procedure—regulation of the sulfur tolerance in gasoline by the climatic conditions where it is to be used. At least in warm weather we see no reason why the sulfur limitation may not well be revoked entirely as no one has reported any evidence of corrosion under mild temperature conditions."

Henry W. Ralph **749.**

"Accounting Methods for Refineries"

National Petroleum News, Aug. 1, 1928, pp. 20-22.

This Article 1, is introductory to a series by the man who devised an accounting system for the Indian Refining Co., Lawrenceville, Ill. He points out that "Accounting" is one of the twins, the other being "Procedure" that makes successful (that is profitable) operation of a refinery possible.

H. S. Bell **732.4**

"Insulation Plays Major Role as Saver of Fuel Dollars in Refineries"

National Petroleum News, July 25, 1928, pp. 54-60.

Requirements of refineries for insulation are described, range given as from —20 degrees F. to 1200 degrees F. Various parts of refinery equipment and their needs for insulation, type of material, methods of applying and keeping it up are described.

Paul Truesdell **741.32**

"Tongue of Flame from Steamed Rerun Still Burns 67 Men"

National Petroleum News, Aug. 8, 1928, pp. 23-24.

This describes an accident at the plant of the Indian Refining Co. in Lawrenceville, Ill., in which more than 20 men lost their lives. Still which developed a leak early in the evening had been pumped out, steamed for 4½ hours and blanked off when it let go a blast of flame through the open manhole in the end of the still. The flame leaped more than 100 feet. Only explanation offered is that a burning stream of oil running in front of the still setting, developed enough heat to vaporize a small amount of oil that may have remained in a depression in the bottom sheet. Oil in the still was cracked distillate of about 96 initial and 440 end point.

Valuable Suggestions From Employes Stimulated by Prizes

By John Power
N. P. N. STAFF WRITER

TULSA, Aug. 25

A METHOD of using natural instead of acetylene gas in cutting torches was the most valuable suggestion made by an employe of the Empire Companies during the past year.

Second prize was for a suggestion which eliminated a set of check registers, thereby facilitating book-keeping methods. The development of a tubing line tie chain took third place.

Believing that appreciation is the best spur to ambition, the Empire Companies have developed a system of awards for suggestions turned in by employes which are of value to the company. Cash prizes ranging from $5 up are given for each suggestion accepted.

In addition to these awards, quarterly prizes amounting to $15 for first prize and $10 for second prize are given for the best suggestion made in each of the seven divisions into which the activities of the Empire Companies are divided.

A yearly award of $100 for first, $75 for second and $50 for third prize are distributed for the best suggestions turned from all divisions.

Suggestions and drawings are submitted to district superintendents, who pass on them first. If acceptable to the district head, they are passed on the head of the division in which the man is employed.

Division heads make recommendations to the Suggestions committee as to acceptance and value. According to Q. R. Dungan, secretary of the committee, 143 suggestions have been accepted and paid for since the inception of the award plan two years ago.

The fact that an award is made and appreciation shown by the company has had its effect on the men, as is evidenced by the increasing number of suggestions which are made.

Fifty-two suggestions were accepted the first year and 91 the second. Value to the company of the suggestions is determined by the saving in money or time effected, an increased safety factor, the improvement of public relations, etc.

While not new in practice, the adaption of natural gas in cutting torches to the needs of the Empire was brought about by suggestions made A. M. Williams, H. J. Biggs, and J. J. Twohig. The first two worked together on the idea while the latter worked alone.

The tubing line tie chain in place, ready for the lock to be sent up into the derrick

The suggestion was made almost simultaneously by both inventors, though neither knew that the other was working on the idea. First prize was given to each of the three men.

Nearly all manufacturers of acetylene welding and cutting equipment are now making the special tips for the torches which the use of natural gas requires. While natural gas works well for cutting purposes it can not be used for welding.

Connections may be made direct to a gas line, or if a line is not available the gas is compressed and bottled. Other than the special tips needed, which are built by the manufacturers of welding equipment, the pressure regulators are all the extras needed.

When starting a cut it is necessary to burr the metal being worked on with a cold chisel, but after a cut is under way the natural gas works faster than the acetylene.

The tubing line tie chain was the work of A. M. Billenwilliams of the oil producing division. This device, which supplants the usual piece of soft rope, saves from 20 to 30 minutes in rigging up to pull tubing, as well as adding greatly to the safety factor.

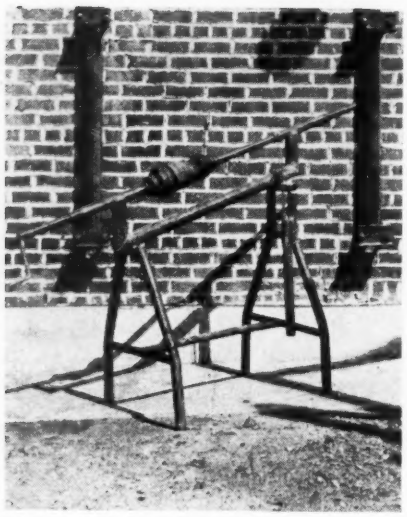
A flat steel piece, with a return hook on one end is fastened to a chain strong enough to support the weight of a travelling block, and tubing line. The hook is caught around the tubing line above the block, slipping being prevented by giving a binding hold on the line while the block is being run up the derrick to be rigged up. A short piece of chain is used to secure the slack of the tubing line after it has passed through the block.

Other suggestions which have been made include a portable A-frame hoist made out of used 2-inch, 3-inch and 4-inch pipe; a ball and seat grinder which saves the balls and seats commonly thrown away when pitted; a pull-rod hold-down for use on long pull-rod lines which are inclined to whip; a home made machine for making swedge nipples; and a hook-up clamp for use when pulling broken pull-rod together.

In addition to being easily moved from place to place the A-frame hoist relieves the strain of roof struts which is imposed when blocks are strung from an improvised I-beam set up on the struts.

The frame is made of used 2-inch, 3-inch and 4-inch pipe. The leg supports are of 3-inch pipe, eight feet, one inch long, with a 2-inch A-support four feet, eight inches from the top. A one-foot nipple of four-inch is welded to the legs at the top of each side support, and a 3-inch by 12-foot piece of 3-inch pipe, which slips into the 4-inch nipples snugly enough to make bolting unnecessary, is used as the I-beam for supporting the load.

When placed on rollers the hoist

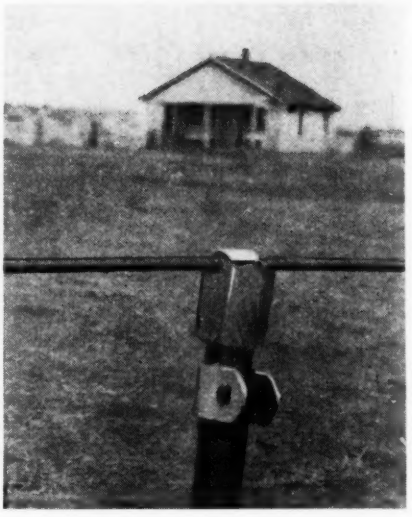


Swedge nipples are easily and cheaply made with this home made device

makes it easy to move loads away from or up to the engine or other machines on which work is done. By using a 3-inch pipe inside a 4-inch sleeve, as has been described, it is possible to adjust the legs of the hoist to floor conditions much more readily than would be the case if the I-beam was fixed in length.

A frame for making swedge nipples has been developed by A. A. Haskins, of the refining division of Cushing. A frame of 1¼-inch pipe supports a shaft of 1-inch rod iron on which the materials to make the swedge nipples are assembled. A handle on the iron shaft makes it possible to rotate the nipple as welding progresses. This rotation makes it possible to produce a swedge nipple as nearly perfect as that which can be produced by any other process.

The pull-rod hold-down, which can be made in the Empire's shop for about 25 cents, consists of a metal strap welded to a metal band which is clamped around the 2-inch rod-line post. The strap fits over the doll-head, and keeps the rod from whipping out. It is particularly useful in places where the rod-line is close to the ground and is driven over.



The rod line hold-down prevents pull rods from whipping

Oil Division of A. C. S. to Discuss Combustion

CLEVELAND, Aug. 22

THE Petroleum Division of the American Chemical Society, J. Bennett Hill, chairman and Carl L. Johnson, secretary, have four sessions scheduled for the fall meeting of the division which is to be held in conjunction with that of the society at Swampscott, Mass., Sept. 10 to 14.

The meetings of the Petroleum Division are to be held morning and afternoon on Sept. 11, 12 and 13. The meetings on the afternoon of Sept. 11 and the following morning will be devoted to a symposium on "Combustion" in conjunction with the Division of Gas and Fuel Chemistry, with Dr. George Granger Brown presiding. The program of the Petroleum Division follows:

Tuesday, Sept. 11 2:00 P.M. and Wednesday, Sept. 12 9:00 A.M.

Joint Symposium with Gas and Fuel Chemistry Division

Symposium on "Combustion"

George Granger Brown, *Chairman*

1. S. P. Burke. Flames.
2. A. G. Loomis and G. St. J. Perrott. The Temperature of Stationary Flames. (Lantern).
3. W. E. Garner. Radiant Energy from Flames.
4. F. A. Smith and S. F. Pickering. Bunsen Flames of Unusual Structure. (Illustrated by autochromes).
5. D. S. Chamberlin and A. Rose. The Flicker of Luminous Flames. (Motion Pictures).
6. D. S. Chamberlin and D. R. Clarke. The Flame Speed of Hydrogen Sulfide. (Lantern).
7. E. W. Stevens. The Gaseous Explosive Reaction at Constant Pressure.
8. W. Payman. The Normal Propagation of Flame in Gaseous Mixtures.
9. J. V. Hunn and George Granger Brown. Gaseous Explosions. V—Flame and Pressure Propagation.
10. R. V. Wheeler and G. B. Maxwell. Flame Characteristics of Motor Fuels.
11. O. C. Bridgeman and C. F. Marvin, Jr. Auto-Ignition Temperatures of Liquid Fuels.
12. W. F. Hamilton. Auto-Ignition Temperatures of Pure Substances, Binary Mixtures, and Gasolines.
13. H. J. Masson. General Detonation Theory from a Consideration of the Behavior of Fuels in the Engine and Auto-Ignition Temperature.
14. J. M. Campbell, W. G. Lovell, and T. A. Boyd. The Importance of Mixture Ratio in Rating Fuels for Knock.
15. Graham Edgar, J. C. Pope, and F. J. Dykstra. The Mechanism of Combustion of Normal Octane.
16. Gustav Egloff, R. E. Schaad, and C. D. Lowry, Jr. The Mechanism of Paraffin Hydrocarbon Oxidation.
17. T. E. Layng and M. A. Yonker. Action of Accelerators and Inhibitors upon the Oxidation of Liquid Hydrocarbons.
18. T. E. Layng and R. Soukup. The Partial Oxidation of Methane and Ethane in the Presence of Catalysts.
19. H. S. Davis. (a) The Relative Rates of Combustion of the Olefins. (b) The Relative Rates of Reaction of the Olefins with Aqueous Potassium Permanganate.
20. R. N. Pease. Reaction Development in Gaseous Combustion.

Wednesday, 2:00 P.M.

Papers

21. G. L. Clark. X-Ray Studies on Paraffin Wax and Their Practical Significance.
22. F. W. Padgett. The Crystallization of Petroleum.
23. Lee D. Jones and F. E. Blachly. Some Characteristics of Amorphous Wax. (By title).
24. E. B. Peck. The Identification of Watch Crystal Type by the Dilatometer Message.
25. George S. Parks. The Heat Capacities and Free Energies of Some Paraffin Hydrocarbons.
26. E. H. Leslie and G. H. Fancher. Vaporization of Petroleum and Pressure Distillates.
27. Frederick S. Bacon. Methods for Determining the Free Sulfuric Acid in Light Oil Sludge.
28. P. Borgstrom and E. E. Reid. Estimation of Mercaptans in Naphtha.
29. Walter P. Podbielniak and E. H. Leslie. Analysis of Natural Gas and Gasoline.

Thursday, Sept. 13, 9:00 A.M.

30. Walter J. Podbielniak and George Granger Brown. Vaporization of Complex Mixtures.
31. Edward W. Washburn, John H. Brunn, Mildred M. Hicks, and Martin Shepard. Apparatus and Methods for the Separation, Identification, and Determination of the Chemical Constituents of Petroleum.
32. Gustav Egloff and C. D. Lowry.

(*Continued on Page* 86)

Many a refiner, contemplating his acres of tanked fuel oil in storage, must wonder if he isn't really working for the steel industry

Is it wise to tie up good money in this way, when with the Dubbs Cracking Process with Flashing System all of that idle fuel oil can be converted into super-quality premium gasoline and sufficient super-quality premium fuel oil for all reasonable market requirements

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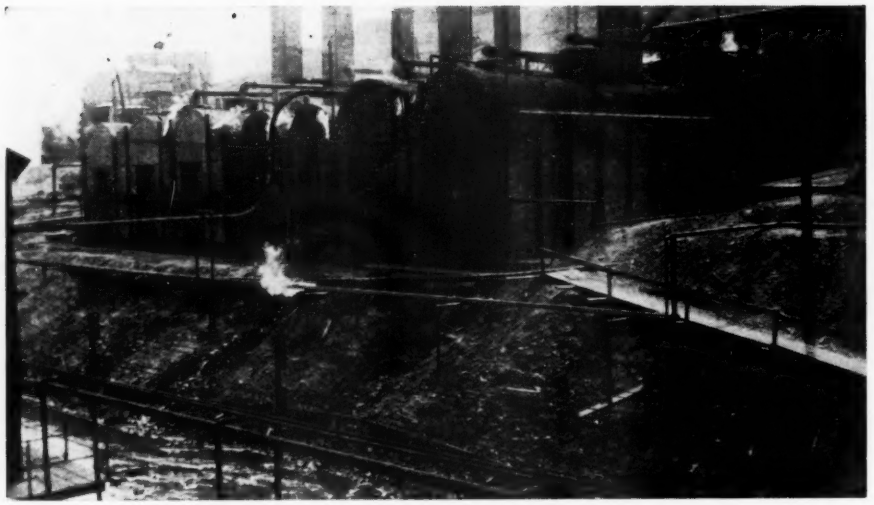

Battery of seven fire stills at W. H. Daugherty & Sons Refining Co., Petrolia, Pa. Drop off in front of stills shows one reason why they cannot burn coal

Making Special Products Brings Profits

By Paul Truesdell

N. P. N. STAFF WRITER

CLEVELAND, Aug. 23

A GREAT deal of attention has been focused during the past year or two upon the possibilities of profit for the refiner that lie in specialization.

At the meeting of the refinery technology division of the A.I.M.E. in New York last February, discussion was keen and opinion was rather sharply divided as to whether the refiner could more profitably build up a technical staff of research workers to develop new specialties or whether he should direct the efforts of his scientific men entirely to the problems of better refinery operation with a view to manufacturing the established bulk products cheaper and better.

This article is about a Pennsylvania refinery that for about half a century has made a profit from the manufacture of special products—for a considerable part of that time, in fact, making nothing else.

The refinery is that of W. H. Daugherty & Son at Petrolia, Pa., near Butler. The plant is owned by L. Sonneborn & Sons, Inc., with headquarters in New York. The original specialty made at the Petrolia plant was petrolatum, the next, started during the World war, was white oil and the latest product to be taken up was Pennsylvania motor oil. All three are now being manufactured at the plant.

This refinery according to Dr. F. W. Breth, chief technologist of the company and in charge of plant operations, was the first in America to make medicinal and technical white oils. It is now one of the four American refiners making them.

The Pennsylvania grade crude produced in the fields around Butler, Pa., according to Dr. Breth, is particularly adapted for the manufacture of petrolatum, in fact a large proportion of the world's supply of that product in its various grades, comes from the Daugherty refinery and two or three other plants that run on the same crude. When the Daugherty plant was built some 50 years ago, its principal purpose was the manufacture of petrolatum.

The motor oils already mentioned are made from the Butler and other Pennsylvania crudes and are marketed under the name of Amalie oils, bearing the 100 per cent Pennsylvania trade mark.

L. Sonneborn & Sons Inc., was founded as an American company some 30 years ago by Dr. Ferdinand Sonneborn, who came to this country from Germany. He is a brother of Jacques Sonneborn of the Stern-Sonneborn Oelwerke of Hamburg, Germany.

The American company acted as the agent of the German company, as well as carrying on a buying and selling business on its own account. Dr. Sonneborn, who is a chemist, saw the possibilities to be realized from development of the petrolatum trade and he cast about for a favorably located plant to manufacture it. The purchase of the Daugherty plant some 25 years ago was the result.

As is well known, the uses of petrolatum are many. Probably the greatest amount is consumed as a basis for ointments and salves and in various cosmetic preparations, not the least important of which is in various decoctions sold to colored people for straightening their hair.

Fire still running tanks

The Daugherty plant makes seven grades of petrolatum each of which requires a different number of filterings through fuller's earth and bone black, the latter for deodorizing. The grades and the number of times each is filtered follow:

Color	Times Filtered
Alba	10
Snow	8
Lily	6
Cream	4
Golden	3
Extra Amber	2
Amber	1

The raw material for these

The Oxweld R-27 regulator is not a nozzle type regulator. For this reason it has exceptional flow capacity and will function properly without freezing.

Stop Playing Jackstraws *with regulator parts*

A LARGE steel company employed two men to keep their several hundred pieces of oxy-acetylene equipment in repair. Recently they standardized on the Oxweld R-27 regulator. Now one man alone is able to handle what repair work is necessary.

Why?

Because the Oxweld R-27 regulator contains only 23 parts. It does the same work older regulators did with thirty-three or more parts. In fact it does it better. Any mechanic can remove all the R-27 parts—make a thorough inspection, replacing a worn valve seat, if necessary—and reassemble—all within a very few minutes and without special tools.

This unusual simplicity in design saves hours of repair time for more productive work, and is an important factor in the most economical operation of oxy-acetylene equipment.

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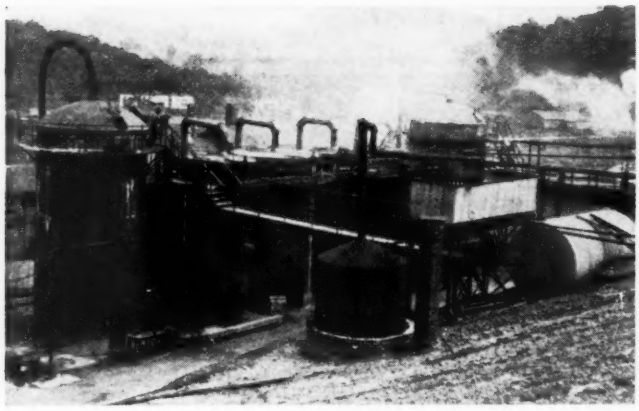

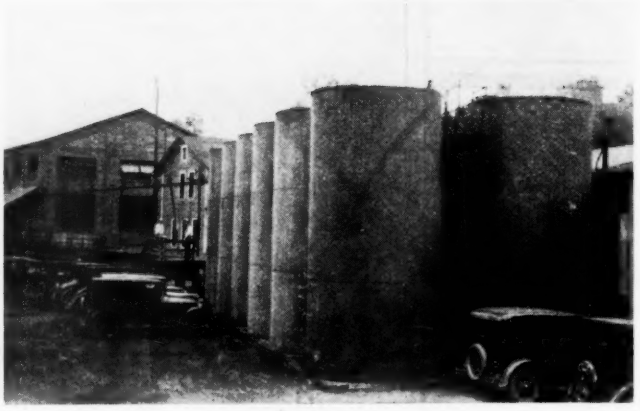

Left: Agitators for treating of white oils and lubricating oils. Right: Barreling tanks for Amalie motor oils, barreling house in the background, Daugherty refinery

products comes not only from the crude run at the plant but also from the other Sonneborn refinery at Franklin, Pa.

The finished petrolatum is shipped mostly in wooden barrels, but some moves in steel drums and a little in tank cars. It goes to all parts of the country and of the world. Japan is a particularly heavy buyer.

For years the American Sonneborn company was the selling agent for the white oils made by the Stern-Sonneborn organization in Europe. All the white oils produced in the world, up to the beginning of the World war, were made in Germany, from crude produced in Russia. With the outbreak of the war, the supply of these oils was cut off.

Dr. Ferdinand Sonneborn, who as a chemist had been active in the manufacture of white oils in Germany, knew the processes and methods of producing them and he set his organization to work to find suitable American crudes for the purpose, and to develop proper manufacturing processes.

That was the beginning of the white oil industry in America. The first oils of this kind were made by the Sonneborn company in the beginning of 1915 and the business has been increasing ever since. It was somewhat later, according to Dr. Breth, that the other American companies developed the manufacture of white oils.

The principal equipment of the refinery consists of:

Seven fire stills with suitable condensers, tail house and so forth.

Seven steam stills equipped with open and closed steam coils.

Filter house containing 97 three-ton filters.

Fuller's earth roasting furnaces with 72-ton capacity.

A 100-ton refrigerating plant.

Agitators for acid treating.

Boiler house containing five boilers aggregating a rating of 1200 horsepower. Four of the boilers are of the horizontal return tubular type and one is a water tube boiler. Four are hand fired and one is stoker fired.

The Daughtery refinery is unusual in that it has a coal mine of its own, situated about three-quarters of a mile from the plant. Fourteen men are employed in the mine. All the coal used in the refinery comes from this hole in the hillside and it is conveyed to the plant by trucks. Production of coal is governed in accordance with the needs of the refinery. Formerly there was a coal mine right in the refinery yard but this has been abandoned.

Notwithstanding that the company owns its own coal mine, the seven fire stills are fired with natural gas. This is largely because it is handy. The topography of the plant yard is such that it would be very difficult to have coal bunkers along the front of the stills, they being located on a sidehill which slopes sharply from the front of the battery down to a creek.

Inasmuch as the fuel oil produced from Pennsylvania crude is a good grade of gas oil which brings on the average around 5 cents a gallon, its use is out of the question. Natural gas is more expensive than coal but according to Dr. Breth, the fact that ash disposal and coal heaving are avoided makes the fireman force very small and this balances to some extent at least, the increase in cost of the fuel.

The condensers of the fire stills are of the conventional parallel coil type. The running lines lead to a two-story tail house, the lower floor of which is used to make the cuts, the upper floor being reserved for a gas recovery system which is being installed.

The tail house proper is sufficiently large to take care of double the present number of fire stills. One of the condenser pan settings has been erected to enclose a small laboratory where the stillman's assistants run their simple control tests, such as viscosity, flash and melting point.

About 1000 barrels a day of Pennsylvania crude are run in the fire stills, most of the oil coming from the National Transit Co.'s lines although the company owns its own pipe line. Most of the crude is from the "third sand". All operations are batch. The long residuum system is used in the manufacture of motor oil.

The gasoline, kerosene and gas oil fractions are taken off the crude in the fire stills. The residue, or long residuum, is then filtered without diluting with gasoline. This reduces fire hazard considerably. The filtering is done by gravity at a temperature of about 160 degrees F. These products are sold to the trade, T. M. Murphy, manager of the plant, being in charge of

Sharples centrifugal plant, insulated chilling tanks in foreground, Daugherty refinery

The Holmes-Manley *Cracking* Process

Flexibility of Operation.

High Yield of Quality Gasoline direct from the Unit.

Fractionation and Condensation under Full Operating Pressure.

High Yield of Liquid Products with a minimum yield of fixed gas and carbon.

Low yield of Residue Fuel Oil of good Quality.

Relatively low Operating Temperatures.

Ease of Control.

Long Runs and High percentage of Operating Time.

Low Labor and Fuel Costs.

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sales. As in other Pennsylvania refineries, a great deal of attention is paid to keeping down the temperature in the stills, that is, distilling off the fractions at the lowest possible temperature. To accomplish this, a great deal of steam is used and the highest temperature ever reached is a little above 400 degrees F. It has been found at this plant that a difference of only 20 degrees in the temperature to which the oil is heated in distillation will make an enormous difference in the filterability of the product.

After filtering, the long residuum is diluted with gasoline in the proportion of about 67 per cent gasoline to 33 per cent oil and chilled down to 15 degrees below zero F. Then it is run through Sharples centrifuges. The dewaxed solution is sent back to the fire stills where the naphtha diluent is driven off. Then the dewaxed oil is filtered again and becomes the base for Amalie motor oil, being blended with neutrals to give the required characteristics.

The crude petrolatum removed by the centrifuges, together with that bought from other refiners and shipped from the other Sonneborn refinery at Franklin, Pa., is pumped back into the fire stills, diluted with crude oil and run down to the desired bottom. Then it is filtered through fuller's earth and bone black to make the color desired.

Naturally, a refinery carrying on so many filtering operations needs large filter capacity and this plant has it. There are 97 filters. They are small, being of 3-ton capacity each. About one-third of them are used as bone black filters. There is a very efficient filtering schedule whereby the product to be filtered passes through various filters in series, each filter containing earth in a different state of contamination so that the product gets its final run, which brings it, in the case of petrolatum to snow white color, through brand new fuller's earth.

The filter house is equipped with clay handling equipment that was designed by C. H. Alsberg, now manager of the company's Franklin refinery (Franklin Creek Refining Corp.). This consists of an overhead monorail system on which one-ton cars of earth are lifted off elevators and carried to any filter that is to be charged.

The steam stills are used in recovering the wash naphtha used for cleaning the filters.

In conjunction with the filter house, there are three clay roasting furnaces, having a total daily capacity of 72 tons. According to Dr. Breth, the superintendent, Clarence (Shorty) McGinnis, developed a special cooling and handling device, consisting of a seamless pipe 30 feet long and 16 inches in diameter, provided inside with vertical and horizontal ribs. The pipes revolve by means of pinions at an angle of about 30 degrees; the ribs lifting the clay and letting it fall as it rotates, moving it forward as it cools due to constant draft. This simple arrangement has proven so efficient that many neighboring refineries have adopted it, Dr. Breth says.

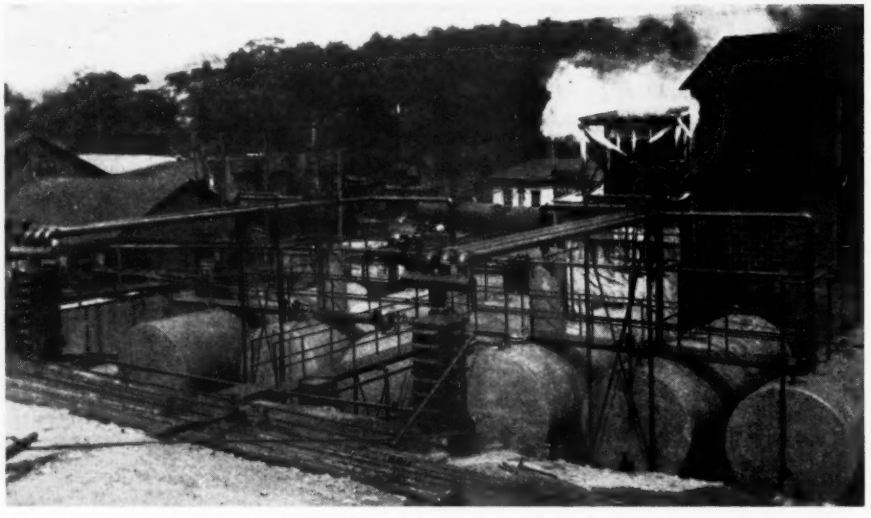
Lighting in the filter house is by vapor proof electric lamps, similar to small locomotive headlights. Filtration is accomplished in gravity filters, which operate under pressure, and this greatly reduces the amount of filter wash. The spent filters are washed into one of the steam stills which have 300-barrel capacity apiece. These stills are provided with Southwestern condensers to reduce the gas vapor losses.

As to the manufacture of white oil, two grades are made, one known as medicinal oil, which meets the specifications of the pharmacopoeia, being odorless, colorless and tasteless, and the other known as technical oil which is colorless and odorless but which sometimes has a slight bluish cast or bloom. This is largely used for transformer oil, in the manufacture of hair dressing compounds, in the textile industries, in bakeries and candy factories for greasing slabs and for many other uses.

The chief requirement in manufacturing this kind of oil is that all the unsaturated hydrocarbons be removed and this is done by heavy treatment with fuming sulfuric acid. Filtering of these oils is said to be a secondary operation or rather to offer no particular problem.

There are a number of agitators for carrying on this acid treating and two wooden towers for absorbing the acid fumes into water. The fumes generated in the operation of treating are said to be very severe. However, they are passed into the bottom of these wooden towers through which water is sprayed from the top. The water absorbs the fumes. There is very little smell of acid about the plant.

Dr. Breth says that some of this sludge has already found uses. Research work is going on to discover still better uses for it. It is non-corrosive, Dr. Breth says, and can be shipped in ordinary tank cars.



Steam stills at the Daugherty refinery

Oil Prices in July

WASHINGTON, Aug. 24.—The general level of wholesale prices in July was slightly higher than in June, according to information collected in representative markets by the Bureau of Labor Statistics of the U. S. Department of Labor.

The bureau's weighted index number, computed on prices in 1926 as 100 and including 550 commodities or price series, stands at 98.3 for July compared with 97.6 for June, an increase of approximately ¾ of 1 per cent. Compared with July, 1927, with an index number of 94.1, an increase of nearly 4½ per cent is shown.

Prices of petroleum products increased from an index number of 71.9 in June, 1928, to 73.5 in July. It was 71.9 in June, 1928.

England Subsidizes Air Traffic

NEW YORK, Aug. 25.—First class passage in a passenger airplane from London to Paris, a distance of 225 miles, now is $23.75, or 10.5 cents per mile. This is a little more than the per mile rate by air in the United States. Great Britain has government subsidy for this purpose. A recent bulletin of the Daniel Guggenheim fund for the promotion of aeronautics reveals that the Imperial Airways, Ltd., which has a monopoly on air service in Great Britain, has received, since March 1924 when it obtained the monopoly, $685,000 a year from the government.

Accounting Methods for Refineries

Article Four

Cards Used for Labor Control And Increasing Effectiveness

By Henry W. Ralph

DISCUSSION of labor control will be limited to a description of the minimum records required for a small refinery, a brief description of forms in use at most refineries for this purpose; and some remarks on the type of report which will enable foremen, superintendents and others who carry the responsibility for the proper utilization of labor to know how successful they are in meeting this responsibility.

For a small plant the routine will be less complicated than for a large plant for the reason that in the large plant each individual handling payrolls and the distribution of time has personal knowledge of a smaller percentage of the facts. Therefore, there are more persons who need daily reports and accessible records for such data, and it is profitable to elaborate the current analysis of the effectiveness of labor and other special reports.

For the small plant it may not be necessary to have as a basic time record anything more complicated than daily reports for all the men employed made out by the foremen. Such a report will carry space for date and signature of foremen and might have columns with headings as follows:

Name (or Check No.) Rate	Occupation (Could be omitted) Amount	Hours Description of Work

If any employe is engaged on more than one kind of work it will be necessary to use a separate line for each kind of work.

The total hours worked by each man each day is posted to a payroll sheet that provides a column for each day; and at the end of the period the total hours worked multiplied by the rate gives the amount earned. It is sometimes found very useful to show on such a payroll sheet both the hours for each day and the amount earned by each man for each day, using a combination of faint and heavy ruled lines to prevent confusion in making entries and reading them.

The distribution is developed by posting to appropriately ruled sheets the amount of pay earned by individuals on separate kinds of work, and by accumulating the total chargeable to the various jobs for the pay period.

The check of the payroll total against the total amount of the distribution gives a proof of accuracy.

With an increase in the size of the plant it will always be necessary to introduce changes in the methods of doing the work and the character of reports made if maximum benefits are to be obtained. It should always be arranged so that it will be done currently, and with the minimum of clerical effort necessary to develop the maximum of accessible significant information.

With an increase in the amount of clerical work which must be performed in the making of payrolls and the distribution of time there is an increased opportunity for the use of mechanical appliances in doing the work. These include the typewriter, standard adding machine, time clock, calculating machine, special bookkeeping machine, special adding machine, accounting machine and tabulating machine.

The increase in size also increases the possibility of varying the methods of collecting the necessary information so that the clerical effort for the various classes of employes is handled with minimum effort. The distribution of the time of employes who are engaged at the same task continuously, is much easier to handle than the distribution of time of a repair gang or of a gang that spends a portion of its time on construction work.

For a large refinery there may well be a score of forms in use, all of them serving a real purpose and doing it satisfactorily. There are listed in the following paragraphs a number of typical forms that can be found at many plants; stating for each the main purpose and the elements which have been found important for such purpose, unless such description is too voluminous for the scope of this article.

Application Blank

These are invariably found in plants which are large enough to maintain a personnel department; sometimes in those plants which are located in small towns and draw a fairly high grade of employes from neighboring towns. They are rarely used by small organizations. In most organizations they are used for clerical and high grade employes below the executive rank. They serve primarily, to record facts concerning the training, ability and reliability of the applicant and details which might be useful under conditions of sickness, absence, etc. A personnel manager finds special use for an application blank, acting as it does for the opening of the individual employe record, and often being used in his analysis of the applicant's potentialities.

New Employe Record of Employment Card

The primary purpose is to notify interested parties of hiring of new employes. It is often used as a permanent record card for employes while in the service of the company. Usually it is made in more than one copy so that interested departments may be notified. It also is frequently used as formal record of executive approval of the employment of each new employe. Elements usually found are date, name of employe, employe number, address, telephone number, marital status, trade or occupation, etc. Space should be provided to record changes in position, location, salary and the date of such changes if used as permanent record card for employe.

Payroll Change Card or Transfer Card

This card is used to notify interested departments of the transfer of an individual between departments, change in salary, change in location, or change in position. It is usually made in more than one copy and frequently used as formal record of executive approval of such changes. Elements usually found are: Name of employe, employe number, present salary, new salary, present position, new position, present location, new location. Another element frequently found is the reason for change; also, if a replacement, the name of individual replaced. When used to obtain executive approval, space should be provided for the signature of the person making the recommendation and effective date recommended; also for the signature of person who approves same and effective date approved.

Settlement Slip or Discontinuance of Employment Card

This card is used to notify payroll department and other interested departments of separation of employes from the company. Elements usually found are: Department, name of employe, employe number, occupation, and hour and date on which services

Billions of Bubbles

It does make a difference what a fellow ties up to

Natural Gasoline Plants and Equipment should be selected with the same care that a man uses in selecting a wife. At no time should there be occasion for ruing a choice once made.

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Campbell "Oil-Froth" Absorbers are extracting 3 gallons out of every 4 of natural gasoline produced in California today.

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were discontinued. Since this is not always the same as time for which payment is made provision should also be made to show last inclusive date for which payment will be made. This card is usually made in more than one copy; and on appropriate copies should be entered the reason for termination of services.

Employe Record Card

This card is used by personnel manager, department head, or in payroll department as a continuous record of the individual's salary or pay basis while employed. Often it is advantageously combined, as described before with the new employment card.

Employe's Annual Earning Record

This is used to keep record of earnings of each employe for each pay period. Serves primarily for yearly report required by federal income tax bureau, but has value for ready reference concerning earnings of each employe. The essential elements are name of employe, check number, location and provision for entry of items from payrolls from each period during the year.

Employe's Clock Card

This is used to record time "in" and "out" of plant. Usually it serves as a check on other records affecting payroll and payroll distribution. It is used in some plants as a fundamental payroll record.

Payroll Sheet

This is used in general after its completion and approval by responsible parties as the basis for filling envelopes or writing pay checks. It has columns for deductions if sales are made to employes or if collection is made for special objects such as pensions, insurance, etc., through the medium of the payroll; as well as a column for net amount due. Elements usually found are: Department, last date of pay period (printed heading usually shows length of pay period, whether week, half-month or month) name, position, rate, hours or days, amount. Some payrolls have an additional column for "previously paid" items.

Individual Time Card or Group Time Card

This is used in general for recording of basic information necessary to make correct distribution of time. The ultimate object is an adequate description of the kind of work and the amount of money which is chargeable to each kind.

Distribution of Time Sheet

This is used to develop in the most convenient manner possible the total charges to individual jobs or subaccounts. It usually is a sheet with many columns which are used to

accumulate amounts that should be charged to various sub-accounts.

Individual Job Ticket

This is used to collect data covering time of individuals on specific jobs. One may be made for each man for each job daily, one for each man daily, one for each job daily for all men in gang, or one for each job for all men employed thereon for specified period. Job tickets may be found to vary widely but the elements usually found are: Date and hour of beginning work, date and hour of completing work, and description of work, with space for developing the amount chargeable to the individual job. It should show the incidental data necessary for filing and proper handling, such as its consecutive serial number, appropriation number if any, type of work whether repairs, replacement or new construction.

Job Order

This is used to give definite instruction for minor repair and installation jobs, or specific instruction for specific parts of major jobs. It should show where work is to be done and sufficient information to enable foreman or mechanic to know character of work to be done and its extent. It should show time of completion (particularly if date has been specified), how materials are to be obtained, and will generally indicate the account to be charged for time spent on the job.

The foregoing discussion dealt almost entirely with the detail of forms which are essential to the workmanlike handling of information. In emphasizing an easy clerical routine in the handling of this data it should not be overlooked that the demand for accessibility which is most insistent, is the one which has its origin in operating requirements.

Regardless of which particular reports described herein may be used for the collection of payroll data or the distribution of time, it has been found helpful to successful management to have each person that carries the responsibility for a group of men or for a job he does individually, to know currently how successful he is performing his task. If he makes a daily report he should keep a duplicate of his report. If he does not make a daily report he should keep a record of the hours spent under his leadership and the accomplishments during that time. If the report or his record enables immediate comparison of his accomplishment with a definite objective or a quota and can be inspected by his immediate superior, this will add to its effectiveness.

In general, the recollection of a foreman may be depended upon to guide him from day to day in the establishment of a daily objective and make his supervision effective, but in addition to that he should be

Distillation—Fractionation

Sixty-eight articles in the last 52 issues of NATIONAL PETROLEUM NEWS have been published on the subject of increasing yield of products—improving their quality—reducing manufacturing costs—equipment design—

All these phases of profitable refining are discussed from many angles. Various types of equipment and various operating methods actually in profitable use are described.

This is an average of more than one article per issue on this single angle of refinery operation. For your file reference we list them below:

1928

Narrow distillation range oils best for absorption Aug. 8, p. 54

Distillation test in determining vapor pressure Aug. 1, p. 58

Light fractions from stabilizer July 25, p. 21

How important oil tests are applied Aug. 22, p. 81; Aug. 15, p. 73; Aug. 1, p. 80; July 25, p. 29; July 18, p. 26; July 11, p. 60

Improving efficiency of shell stills July 11, p. 69

Gasoline recovery from gases, Bayer charcoal process July 4, p. 67; June 27, p. 97

Zilwaukee refinery adapted to small field June 20, p. 23

Vertical steam still for fat oil distillation June 6, p. 37

Saves $80,000 yearly with auxiliaries June 6, p. 32

Fractionation theory and practice May 23, p. 102

Careful refining and selling build trade May 23, p. 56

Distillation process control by laboratory May 16, p. 57

Cutting costs in steam raising May 16, p. 49; May 9, p. 49; May 2, p. 17

New types of distilling equipment May 9, p. 76

Halves fuel costs with old shell still May 2, p. 81

Pipe still economy in making Penna. lubes May 2, p. 56

Good products at low cost Apr. 25, p. 85; Apr. 18, p. 61; Apr. 11, p. 54

Careful fractionation cuts costs Apr. 25, p. 48

Neutralizing lube oils with ammonia Apr. 11, p. 111

Bigger profits for refiners in 1928 Apr. 11, p. 28; Apr. 4, p. 25; Mar. 28, p. 28; Mar. 14, p. 42

Natural gasoline industry must make new products Apr. 4, p. 74; Feb. 1, p. 49; Jan. 25, p. 17

Technical control of refinery processes Mar. 14, p. 144; Mar. 7, p. 51; Feb. 29, p. 76

Shell still as big volume distilling unit Mar. 7, p. 60; Feb. 29, p. 63

New device burns sludge coke under boilers Mar. 7, p. 101

Refinery engineers discuss combination-distillation Feb. 29, p. 21

Acid sludge disposal unsolved refinery problem Feb. 22, p. 75

Method for removing all wax from lube oil Feb. 8, p. 22

Increasing still capacity without capital outlay Jan. 25, p. 73

New equipment results in first profits in 7 years Jan. 25, p. 23

1927

Continuous distillation from crude to pitch Dec. 28, p. 53

Makes refinery by-products pay profit Dec. 21, p. 19

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Advantages of continuous flash vacuum distillation Dec. 14, p. 78

Sulfur determination, revised test methods Nov. 30, p. 46

Detection of sulfur in petroleum and distillate Nov. 23, p. 53

Economies in internal flue stills Nov. 16, p. 93

Advantages of continuous tube heaters over shell Nov. 9, p. 99

Re-running has place in refinery Nov. 2, p. 55

Circulating oil increases throughput Oct. 5, p. 49

Absorption plant pays its way in gasoline Oct. 5, p. 87

Temperature control in refining operations Sept. 21, p. 111

Methods of temperature control Sept. 21, p. 119

Petroleum fractionation Sept. 21, p. 125

Recent pipe still development Sept. 21, p. 131

Crude distillation equipment improvements Sept. 21, p. 139

Remodeling shell still battery Sept. 21, p. 179

Temperature and pressure instruments Sept. 21, p. 188

Improving natural gasoline manufacturing Sept. 21, p. 213

Automatic controllers for natural gasoline Sept. 21, p. 215

Gasoline recovery by charcoal method Sept. 21, p. 251

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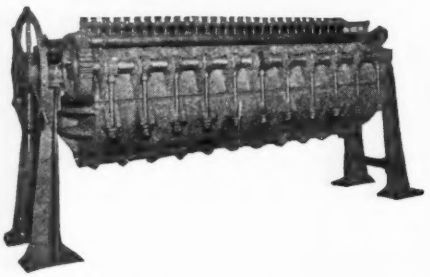

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supplied with a summary of accomplishments over a definite period and the relative value of those accomplishments with similar groups over the same period or his own accomplishments over similar periods.

In the petroleum industry the type of information which should be presented to foremen will vary somewhat according to the kind of work that is done and the gang employed. Most of the operations are conducted on a 24-hour basis and the crew is composed mainly of regular employes. Almost invariably, however, there will be other labor that is utilized, either to take care of special tasks or to take the places of absentees. The information required by any individual having charge of a gang must show the accomplishment of the gang in a stated period, and must show the size, type and number of employes of each kind in the gang. These two facts should develop the ratio of accomplishment. If raw materials or supplies are used these also should be summarized and a ratio developed for the unit accomplishment.

It is usually worth while in setting up information for purposes of comparison to limit the comparison to the preceding month and the same month of the preceding year. Even the latter may sometimes better be omitted when conditions have changed radically.

For refinery foremen the following facts have been found effective in arousing interest and stimulating them to increased efficiency.

Labor utilized is broken down to show the normal or standard size of gang and a subdivision of other labor. Other labor is subdivided to show special help utilized for cleaning stills; for cleaning tanks and lines; for cleaning other equipment; for replacing men absent; for unclassified work. The average total labor per day, in dollars, is also shown. Incidental items of information covering labor that may be shown for the period are: Hours of overtime, total hours of absence without permission, total hours of absence with permission.

The facts to be shown concerning accomplishments can usually be measured by the throughput. For a still handling crude the throughput record shows the amount of different crude put through during a period. For other processes it covers the quantities of various products handled. In connection with this is shown the relationship of the hours run in the month as compared with the total hours in a month.

Related to the summaries of throughput, are the summaries of yield as this is an extremely important element in profitable operation, and susceptible to marked variation.

At those plants adequately equipped with measuring devices it has been found an excellent practice to have foremen supplied with daily figures

showing the performance of a unit in utilizing fuel and steam. The loss that can develop from carelessness or lack of knowledge in the utilization of fuel and steam, is stupendous.

When this is done, the daily utilization of steam and fuel should be reported to the foreman as a ratio. Steam consumption should be shown as pounds per barrel. Fuel consumption should be shown on a percentage basis of fuel oil to crude. If coal is used as a fuel it should be converted to fuel oil on a B.t.u. basis.

Sufficient data concerning throughput and yields should be shown so that if manufacturing processes have changed materially or there has been a marked variation in throughput, quantity or kind, the facts will then be readily noticed.

In presenting information of the kind described for the use of foremen it is good practice to limit reports to those factors for which each foreman is responsible and over which he exercises a considerable degree of control.

In plants which are not supplied with sufficient measuring devices it will be difficult to make satisfactory headway in reducing the cost of steam unless the entire organization develops a genuine interest in the cost of making steam, and real cooperation may be obtained from all foremen in economical utilization of steam in the plant.

In the effort to increase the effectiveness of labor in the refinery it will be found that the process is mainly one of education. Significant facts are developed and people trained to make use of such facts. The best routine of today is the foundation of the best routine for tomorrow. Continuous change is always associated with healthy growth.

New Patents

August 21

REFINING

Process and Apparatus for Treating Oil—David G. Brandt, Westfield, N. J., assignor to Doherty Research Company, New York, N. Y. Filed March 23, 1922. No. 1,681,321.

Refining Hydrocarbon Oils—Hiram J. Halle, New York, N. Y., assignor to Universal Oil Products Company, Chicago, Ill. Filed May 12, 1920. No. 1,681,638.

Oil-Soluble Naphthenic Compound—Oscar E. Bransky, Whiting, Ind., assignor to Standard Oil Company, Whiting, Ind. Filed Oct. 29, 1923. No. 1,681,657.

Refining Oils—Louis Burgess, Bayonne, N. J., assignor to Standard Oil Development Company. Filed July 13, 1923. No. 1,681,895.

Art of Cracking Hydrocarbons—Frank A. Howard, Elizabeth, N. J., assignor to Standard Oil Development Company. Filed March 20, 1923. No. 1,681,899.

PRODUCTION

Oil and Gas Well Packer—John W. Smith, Gregg E. Sawyer, and Virgil L. Martin, Independence, Kans. Filed July 14, 1927. No. 1,681,262.

Well Casing—William W. Fry, Los Angeles, Calif., assignor to Robinson Packer Company, Tulsa, Okla. Filed Dec. 10, 1924. No. 1,681,332.

Well Drilling—Waldo Sheldon, Greenwich, Conn. Filed Sept. 24, 1924. No. 1,681,501.

Well-Drilling Apparatus—Waldo Sheldon, South Norwalk, Conn. Filed Oct. 27, 1925. No. 1,681,502.

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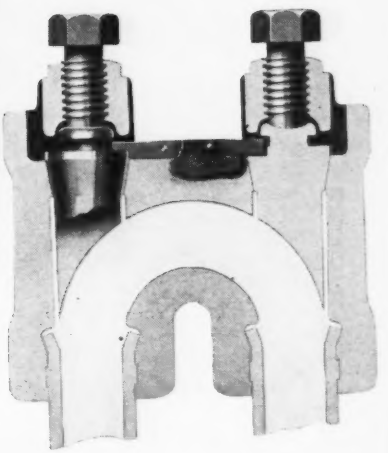

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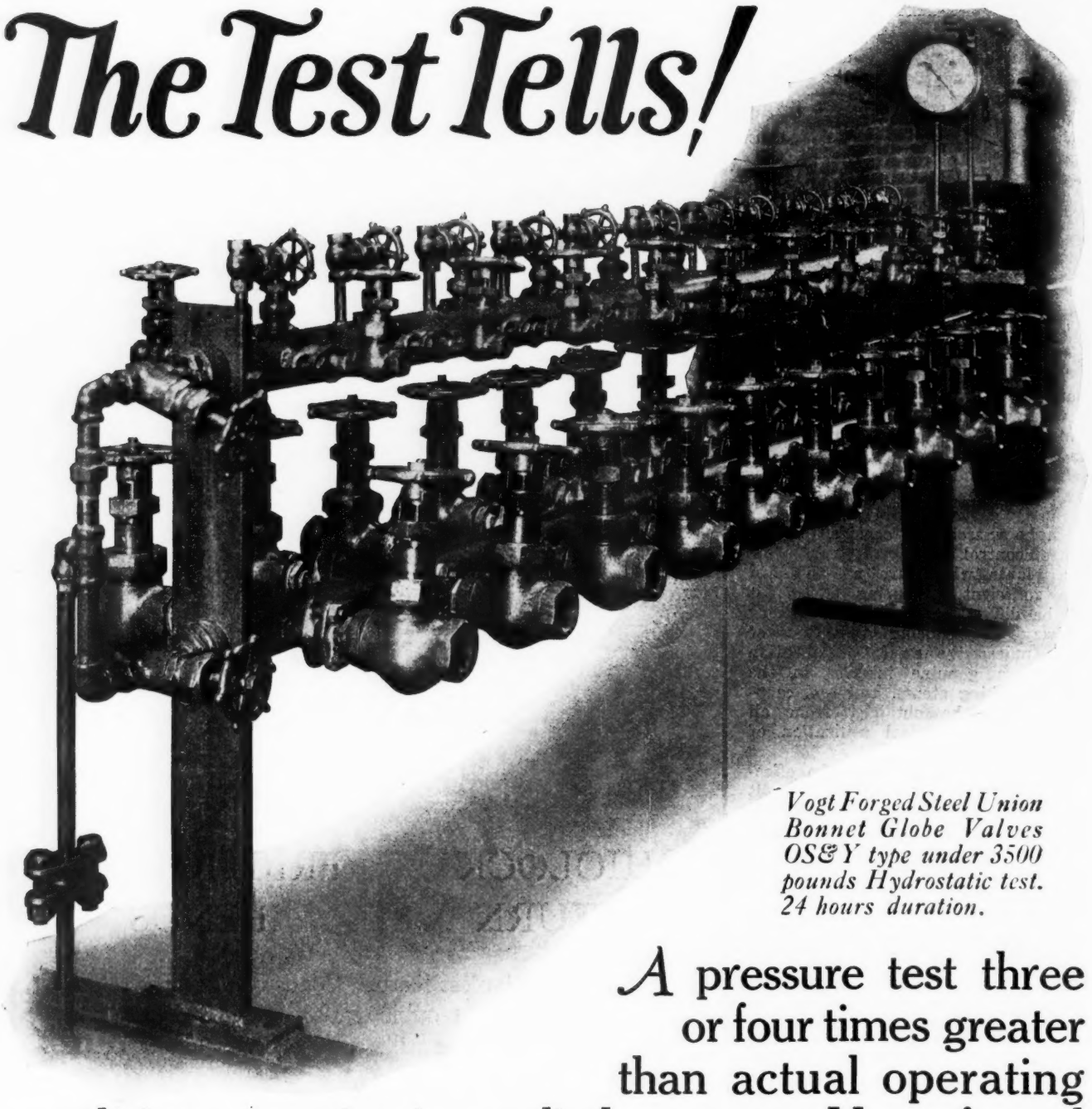

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How Important Petroleum Tests Are Applied and What They Show

THIS is the seventh and last installment of the treatise on "Significance of Tests," prepared by a sub-committee of Committee D-2 on petroleum products of the American Society for Testing Materials. The work is being published serially in NATIONAL PETROLEUM NEWS *by special permission.*

The purpose of the treatise is to tell in simple language the object of each of the recognized tests used by buyers and sellers of petroleum products, and their relation to quality of products. The first installment was published on page 60 of the July 11 issue of NATIONAL PETROLEUM NEWS, *the second on page 26 of the July 18 issue, the third on page 29 of the July 25 issue, the fourth on page 80 of the Aug. 1 issue, the fifth on page 73 of the Aug. 15 issue and the sixth on page 81 of the Aug. 22 issue.*

TOTAL SULFUR OR SULFUR CONTENT

IN COMMERCIAL testing of petroleum products for sulfur content, it is customary to determine the total amount of sulfur, without attempting to separate this value into quantities representing the various classes of sulfur compounds. The doctor test and corrosion tests give qualitative indications of the presence of certain particular types of compounds.

The quantitative determination of sulfur in petroleum products consists of a complete oxidation of the material, and an analysis of the oxidation products.

Scope of Method: The A.S.T.M. standard method of test for sulfur in petroleum oils heavier than illuminating oils (D 129—27)[1] prescribes oxidation of the material by combustion in a calorimeter bomb containing oxygen under pressure. The oxidation products of the sulfur are dissolved in a small quantity of water contained in the bomb and after a supplementary oxidation with bromine, are analyzed for sulfuric acid by precipitation as barium sulfate. This method is most suitable for the determination of sulfur in petroleum oils heavier than illuminating oil and can be used also for all classes of petroleum oils. For highly volatile materials, special precautions must be taken to prevent evaporation losses during weighing. With careful work, results of duplicate determinations should agree within 2 per cent of the sulfur content in the case of material containing above 1 per cent of sulfur. For material of lower sulfur content, the relatively small amount that can be used for the test lowers the degree of accuracy. Careful work, however, ought to yield duplicate results that do not differ more than 0.01 per cent of the material.

In the tentative method of test for sulfur in naphtha and illuminating oils (D 90—26 T),[2] the oxidation is effected by combustion of the material in a small lamp. The combustion products are passed through a solution of sodium carbonate. The decrease in alkalinity of this solution is proportioned to the quantity of sulfur contained in the oil. This method is applicable to gasoline, naphtha, illuminating oil and light gas oil, providing these materials are free from suspended matter and substances that are retained by the wick. If such substances are present, Method D 129—27 should be used. Method D 90—26 T permits the combustion of larger quantities of material than can be handled by the bomb method, which tends to increase the degree of accuracy in the case of oils of low sulfur content. The method also requires less time than Method D 129—27. The accuracy of this method, as applied to motor fuels containing considerable percentages of benzol, has been questioned, but its unsuitability for use with this material has not been proved.

The Kennedy method[1] employs a small wickless lamp with a heating wire to produce vaporization, and has been developed by the Bureau of Standards as a possible substitute for the small wick lamp in Method D 90—26 T. This test is applicable only to volatile materials, such as gasoline and naphtha.

Significance of Results: The significance of the total sulfur content varies greatly with the product and the uses to which it is put; accordingly, the more important products are considered separately. In general, the total sulfur content is important only when the material is to be burned under conditions which make undesirable the presence of much sulfur dioxide in the products of combustion; otherwise, only the corrosive forms of sulfur are undesirable, and these should preferably be detected by appropriate corrosion tests.

Motor Fuels.—While total sulfur (as distinct from corrosive sulfur) has no significance in connection with the induction system of an automobile engine, it may cause trouble, particularly in winter, because a small portion of the products of combustion may find its way into the crankcase and may remain in the cylinders when the engine is stopped. If the fuel contains much sulfur, and if liquid water is present, a dilute solution of sulfurous and sulfuric acids is formed which may cause serious corrosion of parts, such as cylinder walls, bearings and starter chain. This trouble is characteristic only of winter operation in engines which, due either to their design or method of operation, run rather cold and accumulate considerable quantities of water.

Burning Oils.—Any oil which is burned in lamps or stoves indoors should obviously have a fairly low total sulfur content. The presence of considerable quantities of sulfur also appears to injure the burning qualities of an oil in a wick burner.

Fuel Oil.—The importance of the total sulfur content of a fuel oil is frequently overestimated. The sulfur compounds are readily combustible, have a high heating value, and in a properly arranged household or industrial furnace, they are neither noticeable nor harmful except in certain metallurgical operations and in a few cases where the use of highly efficient economizers cools the flue gases to temperatures which permit the condensation of water and sulfurous acid on metal surfaces, with resulting corrosion. Most of the lighter or distillate fuel oils contain less sulfur per unit heating value than does coal.

Lubricating Oils.—The total sulfur content of ordinary lubricating oils is of no known significance. The quantity of oil actually burned in an automobile engine seldom exceeds 1 per cent of the quantity of gasoline burned, and therefore its products of combustion can have no appreciable effect on crank case corrosion. In thread-cutting oils a high content of sulfur is sometimes considered desirable in the belief that it makes possible more rapid cutting and smoother work.

Other Products.—As indicated above, the importance of the total sulfur content of petroleum products

1 1927 Book of A. S. T. M. Standards, Part II, p. 419.

2 *Proceedings*, Am. Soc. Testing Mats., Vol. 26, Part I, p. 848 (1926); also 1927 Book of A. S. T. M. Tentative Standards, p. 433.

1 H. T. Kennedy, *Industrial and Engineering Chemistry*, Vol. 20, p. 201 (1928).

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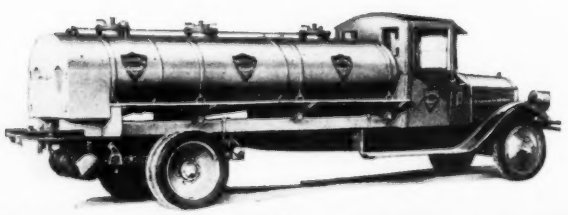

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depends largely on whether they are burned in service and on how the products of combustion are handled. Sulfur dioxide itself is not a corrosive agent except when dissolved in water, and the temperatures in flue gas systems are seldom low enough to permit this. The importance of the sulfur content of any product can be estimated only after careful consideration of the conditions of use.

DOCTOR TEST

THE doctor test[1] is essentially a very sensitive chemical test for hydrogen sulfide and mercaptans. The test is made by shaking the product to be tested with a solution of sodium plumbite made by dissolving litharge in caustic soda. After shaking vigorously, a pinch of sulfur is added and the mixture is shaken again. If the sample is discolored or if the yellow color of the sulfur film is noticeably masked, the sample is generally reported as "sour"; but if it remains unchanged in color and the sulfur film is bright yellow or only very slightly discolored with gray or flecked with black, the sample is reported as "sweet."

If much hydrogen sulfide is present, a black precipitate is formed before the sulfur is added and will generally mask any mercaptan precipitate. If mercaptans are present, with little or no hydrogen sulfide, the first precipitate will be yellow or orange in color and will darken slowly after the sulfur is added, eventually becoming black. The chemical reactions involved in the case of mercaptans are essentially as follows:

$$2\,RSH + Na_2PbO_2 = Pb(RS)_2 + 2NaOH$$

a mercaptan + sodium plumbite = lead mercaptide + sodium hydroxide

(orange)

$$(RS)_2Pb + S = PbS + (RS)_2$$

Lead mercaptide + sulfur = lead sulfide + a disulfide

(orange) (black) (oil soluble)

In the case of heavier prcducts such as kerosene, the lead mercaptides may be sufficiently soluble to give a yellow or orange tinge to the oil layer instead of forming a precipitate with the doctor solution. On the addition of sulfur the oil layer will darken slowly and will give eventually a dark precipitate.

Scope of Method: The test is applicable to the group of products comprising naphthas and kerosene.

Significance of Test Results: Contrary to a belief frequently held, the doctor test gives no indication of the total quantity of sulfur in an oil. It also fails to indicate the presence of free sulfur, which is the usual corrosive agent in gasoline. It does indicate the presence of mercaptans, which in general are not corrosive. For the detection of corrosive sulfur compounds it is decidedly inferior to the copper strip test. While the doctor test is the best available for mercaptans, it is debatable whether these compounds are harmful in the now concentration normally existing in the majority of refined products. Higher concentrations would, of course, give a characteristic odor to the product and might be considered undesirable for this reason. The determination of the total sulfur content, together with suitable qualitative tests for corrosive sulfur compounds, is generally believed to give a better indication of the quality of a product, so far as its sulfur content is concerned, than does the doctor test.

1 This test is described in Bureau of Mines *Technical Paper No. 323B*, page 96. It has not been standardized by the Society.

CORROSION TESTS

PETROLEUM products are frequently used in contact with metal, and when it is essential that the metal shall not be corroded, it is customary to require that the petroleum products pass an appropriate corrosion test. The corrosive substance most likely to be present in such products as gasoline and kerosene is free sulfur which attacks copper readily. It is, therefore, customary to require that products of this type shall pass a test involving contact with polished copper for a specified period of time, at a specified temperature. For certain other products, which (if imperfectly refined) may contain corrosive free acids, tests are sometimes made which involve determining the effect upon iron or steel as well as copper.

Products such as slushing oils and greases, which are used to protect metal surfaces from corrosion, are generally required to pass special tests, differing in principle from those mentioned above. These tests measure the degree of protection afforded by the product under specified conditions, such as a salt spray or immersion in water, and should not be confused with tests which measure the corrosive properties of the product itself.

Scope of Methods: The A.S.T.M. tentative method of test for detection of free sulfur and corrosive sulfur compounds in gasoline (D 130—27 T)[1] involves determination of the discoloration produced when a strip of sheet copper is immersed in the gasoline for three hours at a temperature of 122 degrees F. (50 degrees C.). This method is applicable, also, to kerosene and to other "white" products. This test is one which can be made conveniently and which yields reproducible results, its one serious drawback being that it does not include any quantitative means of measuring the "extremely slight discoloration" which is the limit that differentiates products which pass and which do not pass.

A similar method, involving a temperature of 212 degrees F. (100 degrees C.) and a test period of three hours, has been adopted by the U. S. government for determining the corrosive properties of lubricating oil. The official procedure is published as Method 530.31 Bureau of Mines *Technical Paper No. 323B*, page 97. This method is obviously more severe than the A.S.T.M. test described above and, in any event, is not suitable for volatile products.

U. S. government Method 530.1, published in Bureau of Mines *Technical Paper No. 323B*, page 96, involves evaporating 100 cubic centimeters of gasoline to dryness in a polished copper dish. This test is intended to show both the gum-forming tendency and the corrosive quality of the gasoline. It is only moderately satisfactory when applied to very volatile products, such as aviation gasoline, and is hopelessly variable when applied to motor gasoline.

The A.S.T.M. tentative specifications for petroleum spirits (mineral spirits) (D 235—26 T)[1] include a test method for "blackening," which is essentially a high temperature corrosion test. It involves placing a copper strip in the product to be tested and boiling the latter gently for 30 minutes.

Significance of Results: The A.S.T.M. corrosion test for gasoline is intended primarily as a safeguard against the use of motor fuels which may attack the metal in the fuel and induction systems of internal combustion engines. The test has been in wide use for a number of years and with the exception of its lack of a quantitative standard of interpretation is very satisfactory. It is sufficiently severe to afford the degree of protection required by the user and at the same time does not impose an unnecessary burden of expense by requiring special refinery processing.

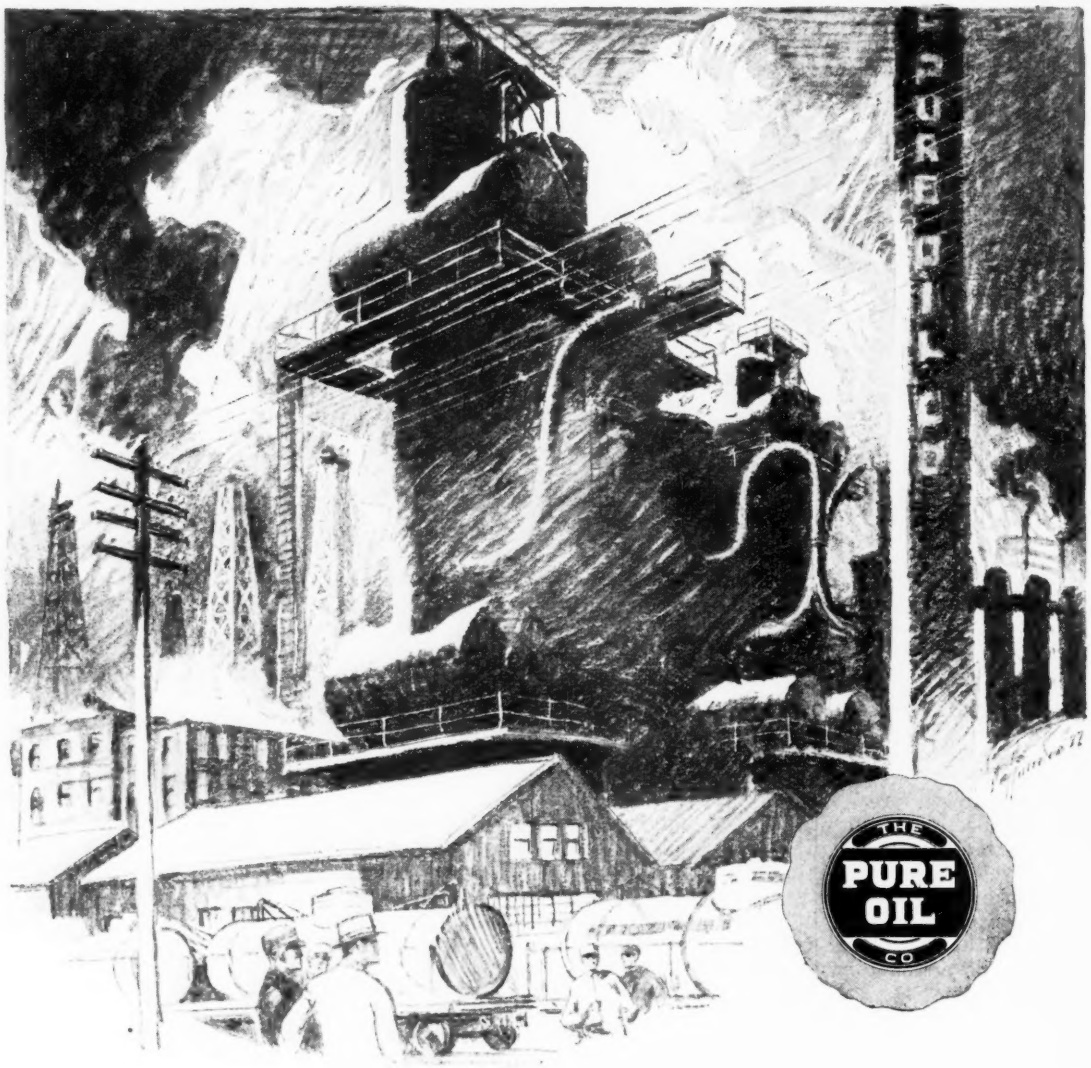
The government corrosion test at 212 degrees F. for lubricating oils is not as widely used as the gasoline corrosion test but seems to afford the proper degree of protection to the user without imposing an unnecessary hardship on the manufacturer.

The copper dish test is one which should never be specified for motor gasoline and one which is of doubtful value for aviation gasoline, so far as indications of corrosive quality are concerned. The test is admittedly more severe than the standard copper strip test but there are so many variable factors involved that it is thoroughly undesirable. The fact that the indications of the test are affected by variations in the atmosphere of the laboratory is sufficient to condemn it.

The boiling test for petroleum spir-

1 *Proceedings*, Am. Soc. Testing Mats., Vol. 27, Part I, p. 926 (1927); also 1927 Book of A. S. T. M. Tentative Standards, p. 410.

1 *Proceedings*, Am. Soc. Testing Mats., Vol. 26, Part I, p. 193 (1926); also 1927 Book of A. S. T. M. Tentative Standards, p. 317.



Uniformly Good—

Yesterday, Today and Tomorrow

JOBBERS who have bought Pure Oil products for years, often remark about their *uniformly* high quality—always equal to or better than specifications!

And there's a good reason for this. Refineries containing the most approved equipment and manned by experts give reasonable assurance of proper refining. But, Pure Oil goes still further to make exact quality sure. It maintains refinery control laboratories where each product is repeatedly tested for quality. And nothing is shipped until expert chemists certify that it conforms to specifications!

Controlled production . . . controlled refining . . . controlled shipping. These are Pure Oil's assurance of uniform goodness in products and in service.

Mr. Jobber: You can be assured of unvarying high quality by sticking to Pure Oil products. Just phone, write or wire nearest Sales Office!

THE PURE OIL COMPANY

U. S. A.

One of the major producing, refining and marketing companies—yet strictly independent

REFINERIES:

Marcus Hook, Pa.
Cabin Creek Jct., W. Va.
Heath, Ohio
Ardmore, Okla.
Muskogee, Okla.
Smith's Bluff, Texas

SALES OFFICES:

Chicago
New York
Philadelphia
Pittsburgh
Columbus, O.
Minneapolis
Tulsa, Okla.
Charleston, W. Va.
Atlanta, Ga.
Beaumont, Tex.
Pensacola, Fla.

its is very severe and has the disadvantage of being an index of the sum of two properties. Blackening of the strip may indicate that the product contains corrosive constituents, or constituents which decompose and become corrosive at the temperature involved, or both. The test has been adopted by the society simply because it is the most practical of several which are available and it is generally recognized that it should be replaced when a better test has been developed.

PROTECTION TEST

CERTAIN petroleum products are used as coatings on metals as protection against corrosion. As both the conditions of exposure and the natural resistance of the metal may vary widely, no protection test has been developed which is applicable to all conditions.

The society has not standardized a procedure for measuring the protective quality of petroleum products. Method 400.1, Bureau of Mines *Technical Paper No. 323B* describes a procedure which is typical of the general class of protection tests. This test involves immersing a polished steel plate, covered with the material to be tested, in a 10 per cent salt solution for thirty days, and observing the result.

Such tests are essentially qualitative and their interpretation depends largely upon the judgment of the observer.

SAPONIFICATION NUMBER

THE *saponification number* of a fatty or a compounded oil is the number of miligrams of potassium hydroxide required to saponify one gram of the oil. It is a measure of both free and combined fatty acids. If it is desired to determine the amount of potassium hydroxide corresponding to the combined acids, it is necessary to subtract from the saponification number the amount of potassium hydroxide required to neutralize the free acids originally present in one gram of oil.

Saponification numbers of the more common commercial fats and fatty oils fall within the ranges shown in the following tabulation:

Fats or Fatty Oils	Saponification Number
Lard Oil	192—198
Tallow	193—198
Neat's Foot Oil	193—204
Fish Oil	140—193
Sperm Oil	120—140
Caster Oil	176—187
Rapseed Oil	170—179
Soya Bean Oil	189—197
Peanut Oil	186—197
Cottonseed Oil	191—197
Blown Rapseed Oil	195—216
Blown Cottonseed Oil	210—225
Degras	110—210

Unless the saponification number of the fat or fatty oil is known, it is customary in commercial practice to use a value of 195.

Scope of Method: The A.S.T.M. tentative method of test for saponification number (D 94—21T)[1] presents standardized procedure for this determination and is applicable to any fat, fatty oil or compounded oil. Many procedures for determining this value are described in the literature and practically all of them will, if intelligently carried out, give substantially the same values.

Significance of Results: The saponification number is the best obtainable index of the percentage of fat or fatty oil in a given product.

ANALYSIS OF GREASE

THE majority of lubricating greases are mixtures of petroleum oil and some kind of soap. They may contain, in addition, one or more of such materials as water, fillers, free alkali and organic acids. The quality and the utility of greases are determined chiefly, by physical properties; for most of which satisfactory methods of measurement are not at present available. Greases which are satisfactory for given purposes can sometimes be identified by an analysis which separates and identifies their major constituents, and the Society has developed a comprehensive general method for this purpose.

Scope of Methods: The A.S.T.M. standard method of analysis of grease (D 128—27)[1] prescribes two general systems of procedure. One of these is suitable for light-colored greases, including fiber or sponge greases, axle greases, dripless oils, cutting compounds and solidified oils, and may be applied to soluble cutting oils excepting those containing sulfonated fats. Certain dark greases can also be analyzed by this procedure provided their content of asphaltic material is small. The other procedure is intended for any black greases which, on account of their high "asphalt" content, give troublesome emulsions if the first procedure is used. The first procedure is simpler and is preferable whenever it can be applied.

The method represents a carefully selected and conveniently arranged combination of established analytical operations which include extractions with selective solvents followed by physical and chemical tests to determine the quantity and nature of the major constituents. The kinds of oils or fats used in making the soaps present in the grease cannot ordinarily be determined by the method.

1 *Proceedings*, Am. Soc. Testing Mats., Vol. 21, p. 663 (1921); also 1927 Book of A. S. T. M. Tentative Standards, p. 430.

1 1927 Book of A. S. T. M. Standards, Part II, p. 355.

Significance of Results: From a practical standpoint the most important properties of a grease are physical and include suitable consistency and texture, proper heat resistance for a given purpose, stability in storage, freedom from corrosive action and satisfactory film-forming and friction-reducing properties. None of these properties can be evaluated by analytical methods alone. Consistency, within certain limits, may be determined satisfactorily by A.S.T.M. Method (D 217—27). This property is dependent to a fairly large extent on soap percentage, but varies also with the temperature of pouring and the rate of cooling of the grease, and other non-chemical factors. Heat resistance is in some degree a function of melting point, which in turn is dependent on the kind and quantity of soap present. Corrosion can be studied by noting the actual effect of the grease on polished metal strips. Stability during storage depends partly on the choice of ingredients and partly on proper manufacture, neither of which can be checked accurately by analytical methods. Film-forming and friction-reducing characteristics, which are the most important items of quality, are obviously outside the scope of any scheme of chemical examination.

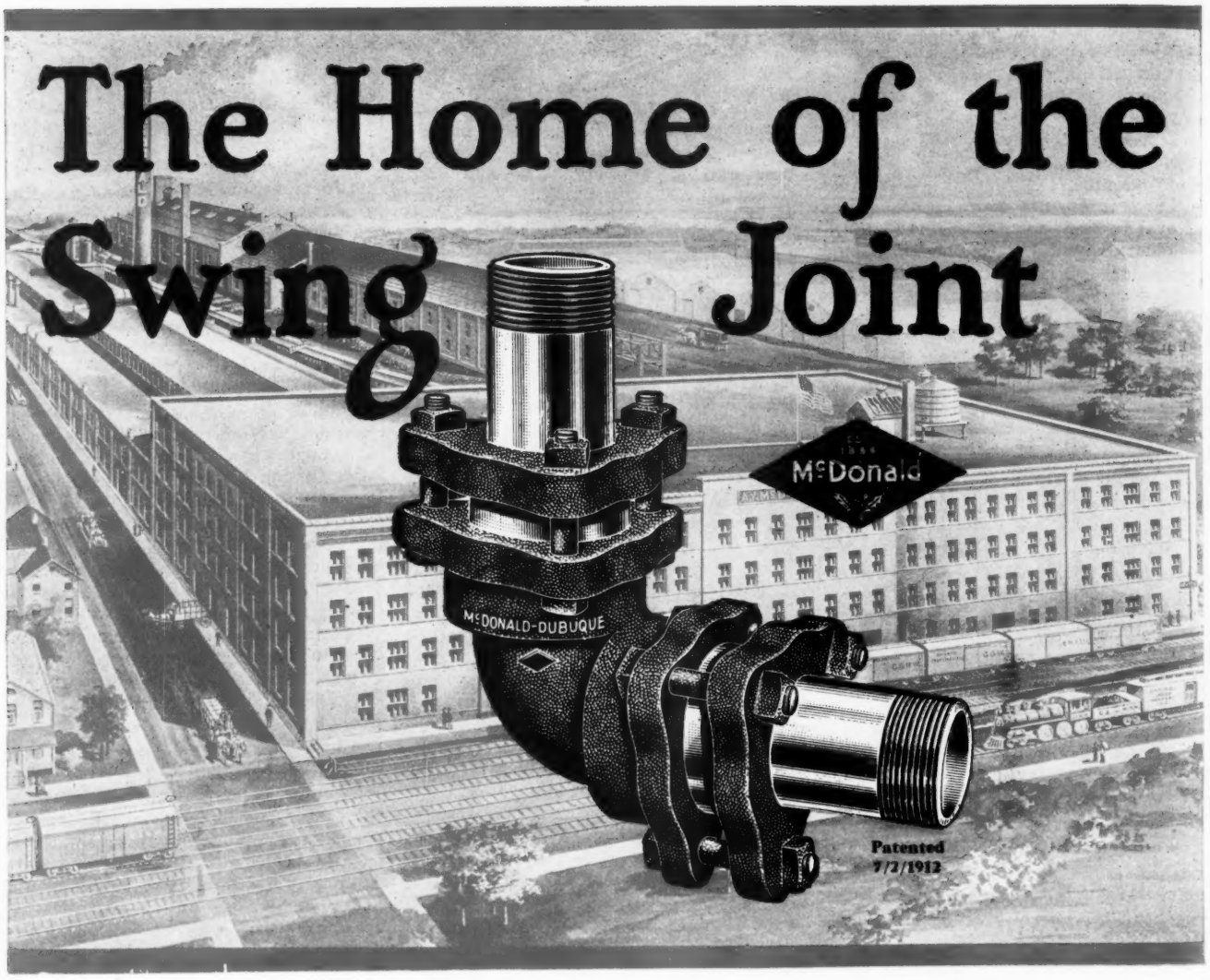
Texture refers to the structure of the grease, such as smooth, fibrous, spongy, or rubbery. It is influenced by the basic constituent of the soap, ordinarily sodium or calcium, but does not depend on the quantity of soap present.

Fillers include solid substances in finely divided form dispersed in the grease, and insoluble in it. Some must be regarded as adulterants, added to increase weight. Others have definite value as lubricants, or increase cushioning power and reduce noise. The purpose for which a lubricant is manufactured must be considered before the presence of filler is condemned or approved.

Small quantities of water are present in most types of greases and affect the consistency and appearance of the product.

The method of analysis determines satisfactorily the kind of basic (metallic) constituent of the soap, its approximate quantity, the quantity of water, total fillers and petroleum oils. It does not, however, furnish reliable indications as to the character of the fats, fatty oils, or fatty acids used in making the soap, or the exact character of the petroleum oil employed. The results of an analysis do not, of course, indicate the quality or degree of refinement of the various constituents used in making the grease.

The analysis of a mixture as complex as grease requires careful technique and considerable experience on the part of the operator, and at best the results are not nearly so accurate



Examine a McDonald Swing Joint and you'll know immediately why the McDonald Plant is known as "The Home of the Swing Joint."

Only from McDonald can you get the same free motion, durability and leak proof construction. McDonald's Swing Joints remain in service 7 and 8 years without re-packing. And they are so designed that they can be re-packed easily and quickly.

Made in single and double styles in sizes from 1" to 12".

Specify McDonald's Swing Joints and you'll know why they are used all over the world.

"The Home of the Swing Joint"

A. Y. McDONALD MFG. CO.

Dubuque, Iowa

Omaha Minneapolis Des Moines Kansas City

There's a McDonald Distributor Near You

McDONALD

as for inorganic materials. The interpretation of the results of an analysis in terms of probable behavior in service is even more difficult. Two greases showing practically identical analytical results may show marked variations in lubricating performance and keeping qualities.

The method of analysis is more useful to the manufacturer than to the user. Its chief value is to show that a grease is of the general type specified, and that the variations between different lots of the same grade and brand are not greater than are reasonable. Purchase specifications which include close numerical limits, based on an analysis of a particular grease, are unfair to the manufacturer and do not insure giving the consumer what he needs.

Oil Trademarks for Copyright

The following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C., trade-mark specialists.

As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

"PENN-DRAKE" No. 261,933. American Oil Works Co., Titusville, Pa. For lubricating oils and greases.

"RED LOCK" No. 265,778. Chicago Motor Oil Company, Chicago, Ill. For lubricating oils.

REPRESENTATION OF A LOCK No. 265,779. Chicago Motor Oil Company, Chicago, Ill. For lubricating oils.

"H. E. WILCOX OIL & GAS COMPANY" No. 266,290. H. F. Wilcox Oil & Gas Company, Tulsa, Okla. For gasoline crude oil, illuminating oil, fuel oil, and lubricating oil. (The above expression is accompanied with the monogram "WILCO", all of which are written on a square which is superimposed on a large "X").

"MARVELOUS OIL" No. 265,382. E. F. Houghton & Co., Philadelphia, Pa. For lubricating oils.

"BLUE BIRD" No. 266,784. Blue Bird Chemical Co., Los Angeles, Calif. For gasoline.

"MEHMKEN TOUCH N TRAVEL" No. 254,467. Mehmken Oil Co., Burlington, Iowa. For gasoline.

"QUAKER PREMIUM" No. 267,996. Quaker Oil Co., Inc., Plainfield, Ind. For motor lubricating oil.

"TYCOL" No. 266,842. Tide Water Oil Co., Bayonne, N. J. For lubricating oils and greases, gasoline, kerosene, and naphtha.

AN OIL DRUM BOTH ENDS OF WHICH ARE COLORED RED AND THE CENTRAL PORTION BLUE No. 255,079. Standard Oil Co., Whiting, Ind. For lubricating oils.

"NIAGARA" No. 264,720. Garcia, Justo & Cia, Buenos Aires, Argentina. For lubricating oils and greases.

"PENNZOIL" No. 265,065. The Pennzoil Co., Los Angeles, Calif. For motor fuel oils and lubricant oils and greases.

"LINDICO" No. 265,376. Leonard T. Gardner, Baltimore, Md. For liquid fuel oils and lubricating oils.

WICHITA—Ted Kittredge, formerly refinery superintendent for the K-T Oil Corp., and Derby Oil Co. and for the past four years salesman for the Dearborn Chemical Co. out of Tulsa, has been appointed assistant district manager at Kansas City for the latter company.

How Much Territory Is Covered By Trade-Mark Rights?

(Reprinted from Printer's Ink issue of Aug. 9, 1928)

VERY often, decisions handed down in trade-mark cases rule on several minor, as well as one or more major points of legal dissension. Occasionally, these minor phases are actually the more important from the point of view of those interested in trade-mark litigation. One such case is that recently decided by the Circuit court of Appeals for the Sixth circuit.

Involved in the case were the Western Oil Refining Co., as appellant, and Frank G. Jones, doing business under the name of the Ohio Valley Oil Co., as appellee. The former is the owner of the trade-mark "Silver-flash." The latter uses the name "Super-flash." In the lower court it was held that "Super-flash" did not infringe upon "Silver-flash." In the Circuit Court this decision was overruled. On this point the court said:

"Upon the question of infringement the test, as frequently announced by this court, is whether the alleged infringing trade-mark or label, taken as a whole, so far resembles the other mark or label as to be likely to be mistaken for it by the casual or unwary purchaser. . . . When we come to consider the use of the name as spoken, we have no difficulty in holding that there was infringement. . . ."

That was the major point upon which the Circuit court ruled. A minor point, and one that concerns many advertisers, had to do with the territorial limitations of trade-mark rights. In this regard the court declared:

"The name 'Silver Flash' as used by appellant is, in our opinion, a registrable trade name. Appellee does not contend that it is not or that appellant has not established the right to its exclusive use in certain sections of the country, but contends that it has not established that right in and around Wellsville and East Liverpool, where the alleged infringement occurred. The argument in support of this point is based upon the principle of territorial limitations recognized in Hanover Milling Co. vs. Metcalf, 240 U. S. 403, and Rectanus Co. vs. United States Drug Co. (6 C. C. A.), 226 Fed. 545; but see 248 U. S. 90.

"Those limitations, in our opinion, do not exclude territory which may be reasonably expected to be within the normal expansions of the business. Such expansions as to a trade name for gasoline, in view of modern transportation methods and the fact that many purchasers are travelers from a distance, would ordinarily embrace at least the entire state in which there had been a widespread advertisement and use of the name in the major part of the state.

"There had been such use by appellant of its name, and although it had not sold gasoline in either of the places where appellee was engaged in business, it is entitled, we think, under the principle stated, to the exclusive use of the name in both of those places."

The Hanover Milling Co. vs. Metcalf case, referred to in the above quotation, was covered in the March 16, 1916, issue of Printers' Ink. It was a decision of the Supreme court of the United States. The essence of it was that the proprietor of a trade-mark cannot monopolize markets that his trade has never reached and where the mark signifies not his goods but those of another. In other words, unless the owner of a mark takes care to make his ownership known throughout the entire market, he may not be able to plead priority of use against one who has adopted the same mark innocently.

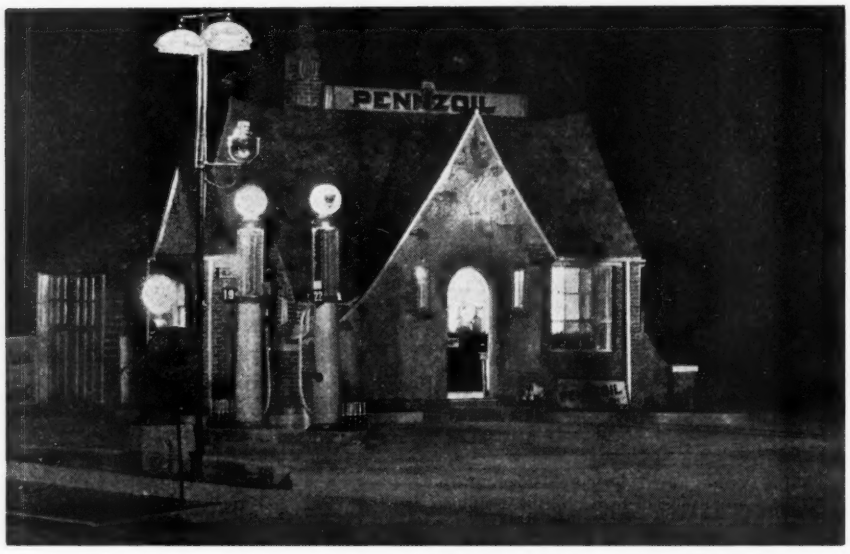
The case of the United Drug Co. vs. the Theodore Rectanus Co. was discussed in the February 29, 1919, issue of Printers' Ink.

This was also a Supreme court of the United States decision. Here again it was ruled that the owner of a mark cannot monopolize with that mark a territory in which he is making no attempt to operate. In commenting on this case, Printers' Ink said at the time:

"Whether or not advertising of a trade-mark in a market where there is no distribution, and is not likely to be any for years, would establish priority in that market, in case of a territorial clash with a similar mark, is a point that still remains undecided. It is very likely though that advertising in such a case would be accepted as a sign that the manufacturer had entered that market, even though his product did not follow immediately."

That this interpretation was substantially correct is indicated by the ruling in the current case.

WICHITA—Jack Rankin, of the Independent Lubricating Co., Inc., Topeka, recently returned from a fishing trip in Canada, where it is said, he had pictures taken of himself with evidence of success.



Night view of single room station of Columbia Refining Co. at Geneva, O., with enclosed wash rack and grease pit attached at rear

Two Designs Supply Variety of Layouts in Station Chain

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, Aug. 25

HOW two sets of plans may be used to build a chain of attractive service stations, few of which are exactly alike, is being demonstrated in northern Ohio by the Columbia Refining Co. of Cleveland.

The Columbia is using only two general plans. But, in building eight or ten new stations the last few months, no two stations are duplicated in all details. However, use of the same type of building material and the same color scheme ties the Columbia chain unmistakenly together.

Each station is built to fit its particular lot. Alterations are accomplished by reversing the plans, by changing a door or a window, but with care not to jeopardize the proportions of the building. One plan calls for an enclosed grease pit and wash rack at the rear of the station proper. This building may be placed at the side or even eliminated from the plan. It may be attached to or detached from the station proper. Such minor shifting offers almost endless possibilities with a few well chosen plans.

For several years the Columbia built only utilitarian stations. They were mostly portable buildings and few attractive styles in portables were selected. That was when competition in the service station business was less keen than today.

Last year the company decided that the service station of the future should incorporate beauty as well as utility. Burt Zimmerman, general manager of Columbia, explains what his company is doing thus:

"We are concentrating quite largely on the English type of station, feeling that, by doing so, we are going into what will be necessary in the future. In other words, the better type of station will command the business and the cheaper station will not do so. We feel that this English type of station, which is a combination of brick and stucco, is quite fitting.

"Business goes into the better type of station, all other things being equal, such as service, etc. On account of the highly competitive conditions that the gasoline business is in at present, it is quite possible that the cheaper station and the station not having full facilities of ingress and egress, water, air etc., is very apt to suffer in comparison.

"One of our latest English type stations has just been completed at Geneva, O., and is said by everybody to be the finest in that town and a credit to the location, replacing as it did a couple of old wooden houses. The station also has a wash rack and grease rack, both covered by a building of the same architectural design as the station itself. The drives are of 8-inch concrete and the whole station is well lighted.

"The Geneva station is on a triangular property on U. S. Route 20 and fits in perfectly with the surroundings. It does more business by reason of our having spent more money on it. We expect to get it all back in increased volume of business. The land there is owned by the company."

The Columbia's English type sta-

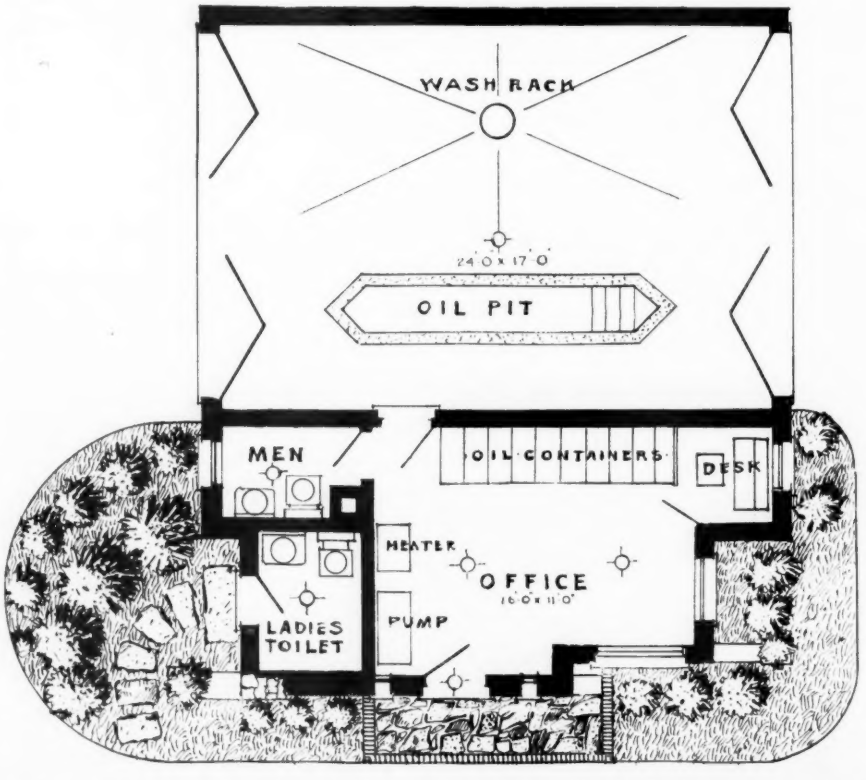


Fig. 1. Ground plan of single room service station of Columbia Refining Co., Cleveland, with wash rack and grease pit attached. Harry T. Jeffrey & Son, Cleveland, architect

tions are all built on company owned land or property held under long term lease with purchase option.

Some of the stations are operated by the company but others are leased to individual operators.

One of the Columbia's types contains one salesroom with toilet rooms for men and women. This type in this vicinity costs approximately $2800 to build. The covered grease and wash racks of the same style as the stations proper brings the cost up to $4000.

The other type has two rooms and toilet facilities. One room is used for an oil salesroom and the other may be leased to some other business such as a lunch stand, battery or tire shop, or auto supply concern. The cost of the two-room type station is approximately $3600. This is without a covered grease and wash rack, which would bring the cost up about $1200, or a total of $4800.

Where a wash rack might not prove profitable a second grease rack may be installed in the building. This change would entail a small increase in cost because of additional excavation.

Fig. 1 is the ground plan of the Geneva station of Columbia. A picture of the completed station also is shown. The pump arrangement is governed largely by the shape of the lot. When a single long pump island would have made ingress and egress difficult, two or three smaller islands, often set at angles, are built.

Also is pictured a one-room station at E. 152nd St. and Saranac Rd., Cleveland, for which the floor plan was reversed and the grease house was detached. This station is on a long narrow lot and the grease house was placed so a car could be driven in straight from the side street.

Fig. 2 is the ground plan of a two-room station. The station built at Lake Shore Blvd. and E. 185th St., Cleveland, which is operated by Shepard & Stenger, and pictured here, is one of this general plan. Instead of a single door into a paved vestibule like the ground plan layout, the Lake Shore boulevard station has individual doors into each salesroom and the vestibule is divided. A window was placed between the two outside doors. This type of station has good window display space in front and in the bay at the side.

Brick work at the stations is skintled or set plain. The stucco has antique finish. The shingles are of vari-colored asbestos with broken edges. Metal window sash is used. The lanterns are of antiqued copper and the timbers of the two roomed station are stained brown.

Flood lamps are used to illumine many of the buildings at night.

Double room service station of Columbia Refining Co. at Lake Shore Blvd. and E. 185th St., Cleveland

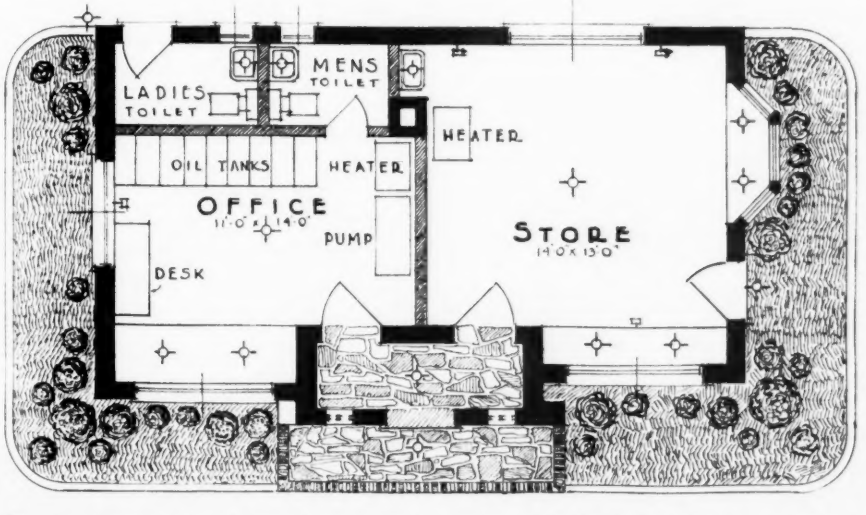


Fig. 2. Ground plan of two-salesroom service station of Columbia Refining Co., Cleveland. Harry T. Jeffery & Son, Cleveland, architect

School Busses Are Factor In Gasoline Demand

CLEVELAND, Aug. 25.—The transportation of school children to and from central schools is a considerable factor in the demand for gasoline, L. H. Martin, Greeneboro, N. C., has pointed out in a letter to NATIONAL PETROLEUM NEWS.

Mr. Martin cites a news letter published by the University of North Carolina to the effect that $1,573,449 was spent in the 1926-1927 school year by the North Carolina school districts in transporting an average of 111,030 white children daily. The school districts operated 2850 busses of various makes and types.

Some of these busses bought gasoline and oil at wholesale from tank wagons but others bought at service stations.

The average cost a year to transport the children ranged from $5.84 a pupil for the school year in one county to $57.25 a year in the most expensive country. The average for the state was $14.15 a pupil.

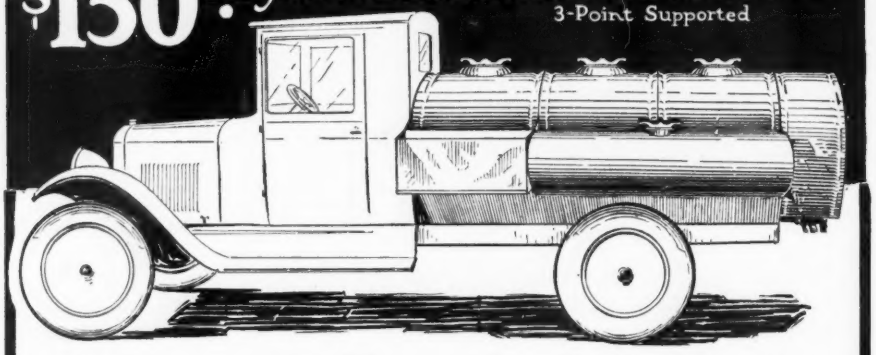
North Carolina is said to be outranked only by Indiana in the number of school busses operated and pupils transported.

Opens Wichita Office for Phillips

WICHITA—P. J. Quinlan, formerly general agent of the Wichita division of the Standard Oil Co. of Indiana, now is in charge of the marketing division in Kansas for the Phillips Petroleum Co., according to the Kansas Oil Men's Association Bulletin of Aug. 16. Mr. Quinlan's headquarters will be in the First National Bank Bldg., here. He resigned from the Standard company last February.

$150.00 for this Convertible TRUCK TANK

3-Point Supported



60 Extra Gallons In Side Tanks

IN THE space of an hour you can switch from side racks to side tanks—a 30 or a 50 gallon tank on each side—adding 60 or a 100 gallons capacity to care for extra demand on gasoline, kerosene or lube oil. This is just one of the convertible features of the New Convertible Truck Tank. It is 3-point Supported. The tank, the mounting, the pipe lines and the bucket box are welded into an integral unit of steel. It is interchangeable on Chevrolet Trucks or the New Ford Truck and others with back of cab lengths around 80 inches. Capacity 375 gallons.

$150.00 includes side racks f. o. b. Kansas City.
Faucets, side tanks and side barrel carriers are extra.

COLUMBIAN STEEL TANK COMPANY

1507 W. 12TH ST.

Partition mounting reduces weight and lowers tank.

COLUMBIAN Partition Mounted 3 Point Supported TRUCK TANK

KANSAS CITY, MO.

3 point support solves torque and vibration problem.

"WHAT ABOUT THE OILGRAM?"

The executive of a gasoline company on the west coast recently inquired of a Tulsa executive, who replied in part. . . . .

"If you were to wire me for Mid-Continent gasoline prices I would phone a member of the OILGRAM staff, and my reply to you would be the GIST OF WHAT HE TOLD ME. The OILGRAM staff is in direct and close contact with the markets almost every hour of the business day.

THEY KNOW THEIR BUSINESS"

You, too, can have the benefit of this close contact with all phases of the market at all the principal refining and marketing centers. The service costs only $25 a quarter, or $75 a year, payable in advance. Approximately 30 cents a day—less than the cost of one wire or one phone call.

Why not avail yourself of this service—send your order with check to the nearest mailing point.

TULSA—904 World Bldg.
CHICAGO—35 East Wacker Drive
NEW YORK—342 Madison Avenue
CLEVELAND—1213 West Third St.

New Stations Building

Springfield, Mo.—Williams Oil Co., filling station.

Washington, Ia.—Mr. Smouse, filling station.

Houston, Tex.—Arthur Mandell and Frank Miller, filling station.

Beattie, Kan.—Driskel Bros., filling station.

Pleasant Hill, Mo.—Land Petroleum Co., filling station.

Manhattan, Kan.—William Jorgenson, filling station.

Parkersburg, Ia.—Grundy Oil Co., filling station.

Manhattan, Kan.—Long Oil Co., super service station.

Sedalia, Mo.—Barney Bertman, filling station.

Waterloo, Ia.—Roxana Petroleum Corp., filling station.

Norwalk, O.—William P. Muehfeld, filling station.

New Philadelphia, O.—Roxana Petroleum Corp., filling station.

Steubenville, O.—Freedom Oil Works Co., filling station.

Calmar, Ia.—William J. Kerbel, filling station.

Armstrong, Ia.—Standard Oil Co. of Indiana, filling station.

Arkansas City, Kan.—E. E. Shields, filling station.

Washington, Ia.—Shell Co., filling station.

Waterloo, Ia.—N. P. Sorensen, filling station.

Alma, Neb.—Standard Oil Co. of Nebraska, filling station.

Hillsboro, O.—Refiners Oil Co., filling station.

Sheboygan, Wis.—Trilling Bros. Oil Co., filling station.

Rhinelander, Wis.—Wadhams Oil Co., filling station.

New Vienna, O.—Mills Bros., filling station.

Minneapolis, Minn.—Skelly Oil Co., filling station.

Keota, Ia.—H. W. Statler, filling station.

Frankfort, O.—Concord Oil Co., filling station.

Park Falls, Wis.—Peoples Oil Co., filling station.

Hastings, Neb.—Continental Oil Co., bulk station.

Madison, Wis.—Shell Union Oil Co., filling station.

Marion, O.—George A. Smith, filling station.

Calmar, Ia.—Paul Kittlesby, filling station.

Cedar Rapids, Ia.—Manhattan Oil Co., filling station.

Napoleon, O.—Charles Hagerty, filling station.

Crosby, Minn.—Pioneer Gasoline & Oil Co., filling station.

McCook, Neb.—Continental Oil Co., bulk station.

Moline, Ill.—Henry Grube, filling station.

Hickory, N. C.—Abernethy Oil Co., filling station.

Bellaire, O.—David Jones, filling station.

Albany, N. Y.—Beacon Oil Co., filling station.

Zanesville, O.—Standard Oil Co. of Ohio, filling station.

Jacksonville, Fla.—Pan American Petroleum Co., filling station.

Oberlin, O.—Janby Oil Co., filling station.

Barnard, Kan.—Home Oil Co., filling station.

Pittsburgh, Kan.—National Refining Co., filling station.

Sheridan, Mo.—Elza Sparks and Charles Wilson, filling station.

West Plains, Mo.—Pierce Petroleum Corp., filling station.

Hutchinson, Kan.—Delos Smith and Felix Graber, filling station.

Clarksville, Tex.—Black Bros., filling station.

Henrietta, Mo.—Binns-Keel filling station being built.

Warren, Minn.—Standard Oil Co. of Indiana, filling station.

Minneapolis, Minn.—N. S. Haagner, filling station.

Minneapolis, Minn.—F. J. Kune, filling station.

Minneapolis, Minn.—Pure Oil Co., filling station.

Ashland, Wis.—Northland Oil Co., filling station.

Madison, Wis.—Percy H. Baldwin, filling station.

Toledo, O.—Arthur and Andrew Johnson, filling station.

Table Grove, Ill.—A. M. Paul, filling station.

Danville, Ky.—Gulf Refining Co., filling station.

Mt. Carroll, Ia.—A. J. Miles, filling station.

Redwood Falls, Minn.—Scenic City Co-Operative Oil Co., filling station.

Regulating Output to Consumer Demand Favorably Affects Profits

By Warren C. Platt, Editor

WE HAVE all undoubtedly admired the tremendous success of the General Motors Corp. and have looked perhaps even with envy at its ability to earn money. We have heard much about its efficiency in manufacturing, about its research work and how it has continually reduced costs and hence reduced the prices of its cars, yet improved their quality.

Probably few oil men have realized the extent to which regulation of the company's output to the consumer's demand has been planned and how it has affected favorably its earnings, if not even been primarly responsible for them.

Donaldson Brown, vice-president of the General Motors Corp., in a talk to a group of manufacturers at Washington, pointed out the important place that this consumer demand planning policy had in the success of the company. He outlined briefly the method the company follows in forecasting the future. He frankly pointed out that until the company started this in 1924, it had the same difficulties and the same failures as other automobile manufacturers.

Some of Mr. Brown's highspots are given below, but before you read them, bear in mind the ease with which the oil industry can keep track of current demand and in a measure forecast the future.

We have in the first place a record running back 10 years showing gasoline consumption for the United States and for several years by many individual states, in which figures we can see that there has generally been a certain steady growth in that consumption. Through the American Petroleum Institute the industry is now getting these consumption figures by state, every month, within 60 days after the month has closed.

We also have the other oil statistics on crude and refined products, issued by the Bureau of Mines, but which are anticipated by two or three weeks by the estimates of the American Petroleum Institute. While these figures show what has happened, nevertheless they are the quickest means available to the industry to know whether stocks are being drawn on or are being increased. When stocks are being increased in any line of business it behooves every man to dig deeply for the cause and to do so at once.

The oil industry also has the weekly statistics of the Mid-Continent refiners on their runs and shipments as reported to NATIONAL PETROLEUM NEWS, which are issued every Tuesday in the OILGRAM and published every Wednesday in NATIONAL PETROLEUM NEWS to cover the period for the week ended the previous Friday. The position of these Mid-Continent figures in the whole picture has been worked out on a percentage basis over enough years so that as these Mid-Continent refiners operate, so operates the whole oil industry. In other words, they can be used as a measuring stick with a fair degree of accuracy for the whole industry.

We also have the tank car prices to go by and these prices are reported every day in the OILGRAM and every week in NATIONAL PETROLEUM NEWS. When the price goes down, it means either a lessening of consumption or an overproduction. In either event it is time for the industry to study the facts.

What the oil industry has frequently overlooked is the fact that there is nothing that it as an industry can do to increase consumption of a petroleum product except over an exceedingly long period of time, a matter of many years; that the market for petroleum products is created by other businesses such as automobiles, gas engines and machinery in general; that within reason no matter how low the price of gasoline, it will not increase the consumption of that product. When we overproduce the needs of the consumer, we do nothing but make a low price for our products and many, many times it has been a ruinously low price.

The earning possibilities of the oil industry lie with the heads of all companies and depend upon the exactness with which they operate in regard to the actual consumption. This is true of the producer, of the refiner and of the marketer. More crude oil, more refining capacity, more marketing equipment will not increase the consumption of products. It will only decrease the oil industry's prices as it has.

Mr. Brown, of General Motors Corp., in outlining the advantages of looking into the future for an estimate of consumption and how the General Motors does it, said in part:

"If we could only find some simple and practical way to forecast the future fluctuations in demand, how much easier would become the task of properly controlling industrial activity! It would remove many of the most dangerous hazards from the course of business and enable us to play a better and more consistent game.

"Forecasting and planning is the essence of modern-day business management. It is not the function of an individual or a department—it is the conscious, cooperative work of an organization.

"The American manufacturer can no longer determine his course according to his ability to purchase the necessary raw materials and the capacity of his manufacturing facilities. No longer may he rest assured that there will be buyers for his products so long as he can manufacture them with reasonable cost efficiency, and barring a general business depression.

"Competition is keen and the cost of manufacture is not the only factor determining the success of the manufacturer.

"Forecasting and planning is nothing more or less than a system of control whereby production, purchase of materials, and the employment of capital are coordinated with sales requirements. Budgetary control is an apt phrase except that it is likely to imply a rigidity that must be guarded against. Flexibility is a prime requisite so that there may be a quick response, and thus the possibility of adjustment throughout the system to the requirements of changes of situation that are inevitable.

"The focal point of the system is the sales outlet. The flow at this point must be gauged and every other ac-

BIG BERTHA

Totally Enclosed
GALLON DISPENSING PUMP

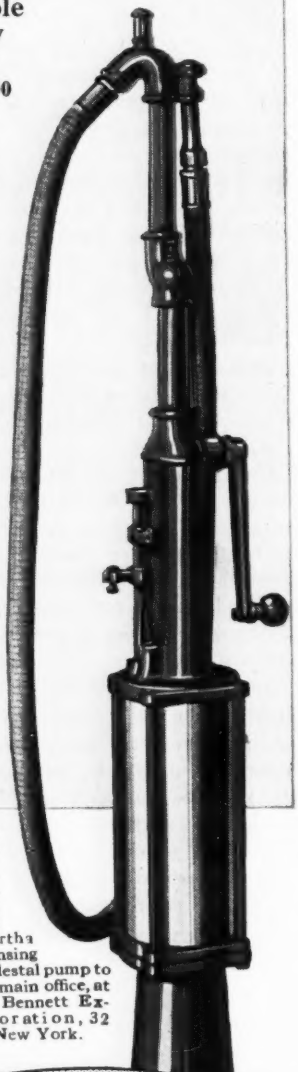
DUE to intensive specialization and large volume production, Bennett offers the trade in the new Model 1500, gallon, half-gallon and quart, overhead discharge gasoline pedestal pump *enduring dispensing service at lowest dispensing cost;* requiring the smallest investment dollars.

Adjustable Quantity Stops

Model 1500

All moving parts are completely inclosed. Finger-tip quantity stops, accurately adjustable, are operated by left hand; air release valve assures quick draining of hose; weatherproof nozzle socket keeps out rain; brass cylinder foot valve, etc. guards against corrosion. Pump handle has extra heavy, cast link for locking. Hose has quick discharge coupling and demountable nozzle.

Write for Big Bertha Bulletin



featuring Model 1500, gallon-dispensing gasoline pedestal pump and Model 1000, Big Bertha gallon-dispensing kerosene pedestal pump to the Bennett main office, at Muskegon. Bennett Export Corporation, 32 Broadway, New York.

Bennett Pumps Corporation
QUALITY BUILT
Bennett
Dispensing Equipment
FOR OIL MARKETERS
Muskegon, Michigan

"Symbol of Quality"

tivity must be coordinated with it.

"Ultimate consumer demand is the fundamental factor absolutely controlling the continued sale of any product. This is not the demand of the manufacturer who buys from some other producer, but that of the user of the final and completed product.

"Overproduction due to mistaken appraisal of consumer demand, style changes, the development of substitutes, or insufficient information regarding accumulated stocks are causes of forced curtailment and unemployment.

"When a state of overproduction becomes fairly general, or applies to a number of principal industries, we are usually in for a depression. Thus begins a vicious circle, of which the economic consequences are intensified by an endless chain of related influences. For overproduction means subsequent curtailment of activities, with resulting unemployment. This, in turn, lowers the purchasing power of large numbers of consumers, with consequent reduction in demand, so that still further curtailment of production is necessary. During this period also occurs the necessity of liquidating surplus stocks, an additional depressing factor. This may bring the permissible production rate down to a level substantially below even the existing lowered rate of ultimate consumption.

"Unfortunately the statistics which are available, and which are employed quite generally as indicative of general business conditions, have a serious inherent weakness. For example, pig iron production, freight car loadings and bank clearings outside of New York are primarily indexes of production. Building permits and records of building construction reflect the state of confidence on the part of capital as to the demand for such structures, but there is always the chance of disappointment. If a state of overproduction exists, and a period of inflation is taking place, we may obtain no indication of it by a study of such statistics.

"The situation in 1921 illustrates the disastrous economic consequences of wrong appraisal of consumption trends. False values were built up by the period of inflation during 1919 and 1920, and **exaggerated expectations of future demands** were created by the competitive buying of raw materials and semi-finished products by manufacturers of all kinds. A state of overproduction existed, but was not recognized. The actual consumption of goods such as automobiles, clothes, and other consumable products was overstimulated by wrong notions of available income. Retailers of various kinds stocked goods to the limit, and bought ahead of requirements because of a false impression of consumption trends. They did not recognize, nor did many others, that a bubble was being blown that would burst from its own internal pressure.

"Perhaps it was in consequence of our experience of 1920 and 1921 that we first became conscious of the peculiar advantages which the automobile manufacturer has in the matter of forecasting and planning his operations. At any rate we began in 1921 to accumulate all the information available as to the retail sales. Reports obtainable from dealers in those days were meager, and such information as we had from this source was not very reliable as an indicator of the over-all situation. We had state registration data, however, from many states which proved of real assistance in our efforts to develop retail sales trends, from the statistical standpoint, and we went seriously about the job of getting more complete reports from dealers.

"Until the depression of 1924 the automobile manufacturers had not come to a full appreciation of the advantages they naturally possessed, in the means of analyzing consumer demand. General Motors had been studying those advantages and measuring the opportunities, but it took a second period of overproduction, from which we suffered as much as other manufacturers, to force a recognition of those opportunities upon us all. In our own case production of cars in 1924 was 26 per cent below 1923; whereas retail sales in 1924 were only 10 per cent below 1923.

"Prior to 1924, however, we were carrying on what is still in effect as a part of our statistical activities—a practice of making monthly forecasts of sales, production, capital requirements and net earnings from operation. These forecasts are submitted on the 25th of each month by each of our operating divisions and are consolidated into a composite forecast for the corporation as a whole. They cover a period of four months, including the current month each time and three months ahead.

"This system was inaugurated in 1921, and at that time the stipulation was made that no division could commit for materials beyond the indicated requirements of the forecast period without special authorization of the finance committee. We have what we call a decentralized type of organization, and it is a basic principle that the management of each division should have wide latitude and the opportunity to exercise their judgment as to the various phases of operations, limited only by such policies as can be laid down in concrete terms in the interest of the corporation. The restriction in respect to material commitments has proven to be thoroughly practical. It is very rare that special authorizations are requested and the corporation is protected effectively from an unreasonable expansion of inventories resulting from disappointment

as to expected sales of our products.

"The weakness of our forecasting scheme in the earlier days lay in the fact that we did not predicate the sales forecasts upon an analysis of consumer demand. We did not have a clear conception of the ordinary seasonal characteristics and were liable to a sharp reduction in sales to dealers resulting from an unrecognized accumulation of stock in their hands. Forecasts of net earnings were correspondingly faulty, and our production schedules and employment of labor suffered fluctuations not justified by existing fundamental circumstances. We did not know the rate at which our product was actually passing into the hands of the ultimate consumers, nor did we know what the stocks were in the hands of our dealers, nor the extent to which these stocks could suitably be allowed to expand or contract in order to secure the important over-all advantage of a more consistent rate of production at the factories.

"I have said that our analysis of consumer demand was not put into effective use until the spring of 1924. It is fair to say that our operations since then, showing, as they do, a substantial betterment in rate of inventory turnover, a steadier rate of factory operation and other economic betterments have proven the constructive benefits of our practice.

"I have referred to the fact that on the 25th of each month a complete forecast is submitted by each of our divisions for the current month and three succeeding months. This includes a forecast of retail deliveries by dealers reported by them three times a month. We also have very complete information as to actual retail deliveries, by months in the past. Thus at all times we have available the actual records of the past as well as a forecast of retail deliveries for three or four months ahead. The accumulation of these records of retail deliveries by our dealers, covering a number of years, and the analysis of state registration data, have given us a very good means of appraising the ordinary characteristics of our business.

"We have found from experience that as we proceed with the continual analysis of deliveries and forecasts, and measure our performance and prospects in the light of seasonal expectancy, we can detect changes in trends and recognize disappointments or improvements well in advance of what could be possible through any other means."

NEW YORK, Aug. 25.—Air mail deposited on time, according to collection hour marked on box or chute, will go out on schedule. If the load is too great, another airplane is put on schedule to transport all air mail and air express deposited within the collection hour.

PRODUCING REFINING TRANSPORTING MARKETING
It never was like this . . .
A wire or letter will bring quotations.
58-60 U. S. Motor Gasoline
64-66-375 E. P. Aviation
41-43 W. W. Kerosene
36-38 Straw Distillate
32-36 Gas Oil Uncracked
22-26 Fuel Oil (Cushing or
24-26 Fuel Oil Blackwell)
Viewing with dismay the increasing competition of Filling Stations and the now common occurrence of finding as high as three on opposite corners, all fighting for the motoring public's business, the necessity of a more firmly established patronage is evident as the Station Owners' greatest problem.
Confidence must be built on quality and friendly helpful service, courteously rendered. To the men watching future profits, Cushing Products offer the proven means of increasing sales —investigate now.
General Offices CUSHING, OKLAHOMA
CUSHING
Refining & Gasoline Co.
Refineries At CUSHING & BLACKWELL, OKLAHOMA

OIL IN THE TANK

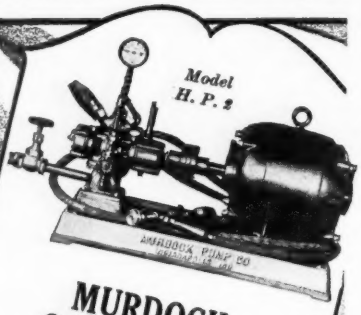
Is As Good As Money In The Bank

Save Your Oil, Until Sold in
BROWN OIL TIGHT TANKS
Our Double Electric Welding Process
Insures You Against Leaks.

Get Our Figures. Compare The Specifications

BROWN SHEET IRON & STEEL CO.
SAINT PAUL, 964-1000 Berry Avenue MINNESOTA

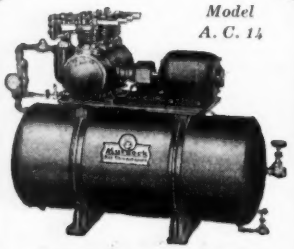
for **MODERN**
Filing Station Service
the
MURDOCK
CAR WASHER AND AIR COMPRESSOR
2 Economical SuperService Outfits



MURDOCK CAR WASHER

Here's an addition to your service that will prove a real money maker. It is a small, compact, economical outfit, but does a better, faster job of car washing.

It is built like the finest fire engine pumps with direct water pressure (no air) and direct drive (no belt).



MURDOCK AIR COMPRESSOR

This compressor is without doubt the neatest performer in the field. It will give you years of dependable economical service.

It is compactly and handsomely assembled, and through its direct drive (no belt) reduces power waste to a minimum.

For Details Write
MURDOCK PUMP CO.
INDIANAPOLIS, U·S·A·

Three Hints That May Win Some Business

CLEVELAND, Aug. 24.—Some service station operators, particularly those on main inter-city routes, find the display of the little metal bell of the telephone companies often attracts trade that otherwise might pass by.

There are thousands of commercial travelers using automobiles these days and often they need to call their houses or prospects at some hour when they are traveling from town to town.

Display of the telephone bell sign may draw them into your station to use a phone and when they are there they usually buy.

* * *

The Standard Oil Co. of Ohio has attached to an air standard at one of its Cleveland service stations a small vending machine that sells two valve cores for 10 cents. What better chance to pick up a few nickels and what better place to put this 24-hour-a-day salesman?

* * *

"Always see that the water in your cans for refilling radiators is sparkling clean," is the advice of one eastern oil man who recites how muddy water put into his car's radiator when he was on tour caused the engine to overheat and require flushing. When he is away from home again and in the vicinity of the station where he was given the batch of mud, he surely will not patronize the stations of the company that caused him the trouble.

CLEVELAND, Aug. 25.—G. J. Steigerwald of Wall & Steigerwald, Inc., Cleveland, has just returned from a two months' motor trip to the Pacific coast. He was accompanied by Mrs. Steigerwald and their daughter.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

32570—**Asphalt** for road building and repair, Barcelona, Spain, purchase and agency.

32599—**Gasoline, kerosene and lubricating oils,** Ujjain, central India, agency.

32644—**Lubricating oils and greases,** Rio de Janeiro, agency.

32841—**Paraffin,** Hamburg, Germany, agency.

32864—**Paraffin,** Hamburg, Germany, agency.

332876—**Motor oils,** Damascus, Syria, agency and purchase.

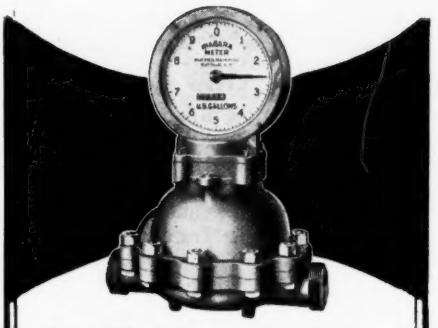
32877—**Asphalt,** Cassel, Germany, agency.

32878—**Gasoline, kerosene and lubricating oils,** Berlin, Germany, agency.

32879—**Fuel and diesel oils,** Oslo, Norway, agency.

32880—**Gasoline, kerosene and lubricating oils,** Marina, Nigeria, sole agency.

32881—**Paraffin,** Hamburg, Germany, agency.



Cut Handling Losses . . . . Speed-up Production with Niagara Oil Meters

IF you would cut handling losses to a minimum, then install Niagara Oil Meters. They will measure your gasoline and oil at every point, and give you a complete check on every movement. Short measurement, over measurement, thefts, leaks . . . . all show up in the meter reading. Automatic measurement conserves time and increases production.

No matter what branch of the petroleum industry you may be in, there are types and sizes of Niagara Oil Meters that will definitely meet your individual requirements. Write today for full information.

BUFFALO METER COMPANY
2889 Main Street Buffalo, New York

Niagara Oil Meters
"The Constant Guardians of Liquid Profits"

Complete Unit $27.50

Brass cylinders, piston rod and valves. 7' length, ¾" Triplexed hose. 110-gal. galv. tank. All pipe and fittings. Delivers 5-gal. in less than one minute.

Savings of $7 to $11 on installation

Please order today! You will be pleased

MARS CO., Aurora, Ill.

German Co.'s Planes Fly 37,500 Mi. a Day

CLEVELAND, Aug. 23.—That Germany heads the world in commercial aviation is the assertion in Engineering Progress, a German periodical quoted in the Aug. 20 issue of Automotive Abstracts. According to the article quoted the planes of the Deutsche Luft Hansa, one flying company, are now flying 37,000 miles a day.

The Tempelhof air field in which the flying activity of the German capital centers is only two and a half miles from the center of Berlin, which is much closer than the airports of American cities. Air service on schedule is maintained between Berlin and practically every capital in Europe.

The Tempelhof field is lighted to permit of night flying. The landing place is designated by a row of lights, red, white and green, placed 350 feet apart. The lights are daily rearranged to correspond with the direction of the wind and give the pilot a chance to make an accurate estimate of his distance from the ground.

Britain Refining Less Petroleum at Home

CLEVELAND, Aug. 24.—Great Britain is using more petroleum than ever before but is refining less oil at home, a survey of the British petroleum trade for the first half of 1928 indicates. The survey is contained in Commerce Reports, published by the U. S. Department of Commerce.

A comparison of imports the first halves of 1927 and 1928 follows, amounts in imperial gallons:

	1928	1927
Gasoline	352,631,193	278,368,428
Other spirits	5,264,327	3,936,549
Kerosene	86,965,653	106,613,780
Fuel oil	233,003,930	199,400,055
Gas Oil	70,444,800	58,966,259
Lubricants	54,868,837	44,215,849
Other products	57,132	111,680
Total products	803,235,872	691,612,600
Crude oil	246,027,009	382,037,032
Exports all products	57,251,168	53,867,256
Re-exports all products	12,996,078	17,594,595

Auto Output is Holding Up

CLEVELAND, Aug. 24.—Automobile production in the United States in July amounted to 390,445 passenger cars and trucks, compared with 396,967 in June and 268,485 in July, 1927. In the first seven months of 1928 2,592,592 passenger cars and trucks were produced, compared with 2,337,459 in the first seven months of 1927.

FORMULA
for a
Business Getting 100% Pennsylvania Motor Oil

First—A quantity of 450 Bright Stock (Sharples Process) refined at the *Coraopolis* plant of The Freedom Oil Works Co.

Second—A quantity of 100% Pennsylvania Crude Neutrals refined at the *Freedom* Plant of The Freedom Oil Works Co.

Third—Blend to tested specifications by experienced specialists of this 48 year old organization, producing a line of Freedom Motor Oils which places your business above competition, pleases your dealers, and helps them to hold their customers.

This is the formula used for years by many of the country's leading jobbers. Their growing businesses recommend that you try it. Write for quotations. Immediate shipment can be made in tank cars, compartment tank cars, barrels, or drums.

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 31

Also available for immediate shipment

450 Bright Stock (Sharples Process) which requires less neutral to blend to the ordinary required specifications.

100% Pennsylvania Motor Oils, *blended to your own Specifications*, from Freedom 450 Bright Stock and Freedom 100% Pennsylvania Crude Neutrals.

Freedom Quality Stocks
600 Steam Refined
635 Steam Refined
650 Steam Refined

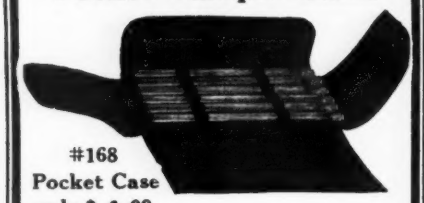
Freedom 300 Mineral Seal Oil made to Railroad Specifications.

Freedom Filtered Burning Oils.

The Freedom Oil Works Company
Freedom, Penna.
Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

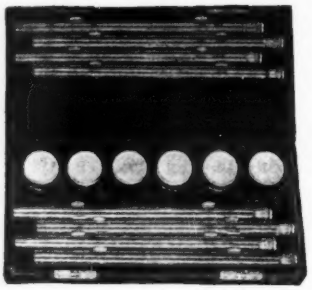
FREEDOM

Pocket Sample Cases



#168
Pocket Case
only $4.00

Sturdily constructed from black cobra grain cowhide. Lined with red plush. Contains six bottles. 9"x½".



175—This case contains eight 9-inch bottles and six grease jars. Made from black cobra grain cowhide, lined with red plush. Has two serviceable nickel slide catches, price including metal capped corks, only $7.00

Less 10% for Cash
Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage
614 Delaware Kansas City, Mo.

BROKERS
— — — AND — — —
JOBBERS

We are open to contract a portion of the output of a plant making

Anti Knock Gasoline
Naptha
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Gas Oil
Low Cold Test Fuel Oil

Correspondence Solicited

Box 712
Big Spring, Texas

ON THE LAZY BENCH

National Petroleum News

Comes Natural

Society Matron—"When a tooth has been extracted, why does the hole feel so large to one's tongue?"

Dentist—"It must be the tongue's natural tendency to exaggerate, madam."

—The Loreco Diamond.

* * *

Passenger (to negro porter while on train for New York): "What time do we get to New York, George?"

Porter: "We is due to get there at 1:15, unless you has set your watch by Eastern time, which would make it 2:15, then, of co'se, if you is goin' by daylight savings time, it would be 3:15, unless we is an hour an' fifty minutes late—which we is."

—Skelly News.

* * *

An Irishman about three sheets to the wind was on his way home. It was after midnight, and as he crossed a bridge he saw the reflection of the moon on the water. He stopped and was gazing into the water when a policeman approached from the opposite direction. The Irishman, addressing the policeman, said: "Phwat's the matter down there?" "Why, that's the moon," replied the policeman. "Well, how in the deuce did I get up here?" asked Pat.

—Herk U. Lee's Log Book

A LOTTA BULL

"Dear!"

With a glance she tried to cow him. But he only looked sheepish.

"Puppy!" she exclaimed.

He choked—there was a frog in his throat. Then realizing that he had made an ass of himself by acting like a bear, he ducked.

—Herk U. Lee's Log Book

* * *

At one of the watering places an impatient young man walked testily up to the bathing house in which he thought his male companion was dressing, and knocking on the same, inquired, "When in blazes are you going to get those pants on?" There was a faint giggle and a silvery voice replied, "When I get married, I suppose."

—Barnsdall.

* * *

"It really is a serious situation."

"What is?"

"Why, the way the hogs' eyes are going back on them. All I read about nowadays is Blind Pigs."

—The Pure Oil News.

* * *

"I didn't mind your naming me Alasper Smith, mother, but why Alasper Y. Smith?"

"Why, after Shakespeare's hero, of course—surely you know of Alasper Yorick!"

—Stanolind Record

* * *

She: "Why not ask father now? There he goes into the billiard room."

He: "Wait till he goes to the library; I'd rather be hit with a book than a billiard cue."

—The Marion Line

* * *

Lady (to trusty): "Are you sure you have time to show me through the penitentiary?"

Trusty: "Yes, madam. I have ninety-nine years."

—Skelly News.

* * *

Two Scotchmen were fishing, when one of them fell overboard. The drowning man came to the surface the second time, and Sandy yelled:

"Denny, if ye dinna come up the third time, kin I have the boat?"

—Barnsdall.

* * *

Dealer (rushing into the newspaper office): "See here, you've published an announcement of my death by mistake. That's got to be fixed."

Editor: "Well, we never contradict anything we have published, but I'll put you in the births column tomorrow and give you a fresh start."

Oil Division of A. C. S. Discusses Combustion

(*Continued from page* 58)

Jr. Potential Cracking of Fuel Oil.

33. W. F. Faragher, J. C. Merrell, and G. Egloff. The Cracking of Vegetable Oils and Fish Oils for Motor Fuels and Other Products.
34. W. F. Faragher, J. C. Morrell, and J. L. Essex. Relationship between Fuel Value, A.P.I. Gravity, and Composition of Uncracked and Cracked Fuel Oils.
35. H. G. Schneider. A New Method for the Determination of Olefins and Aromatics in Gasoline.
36. H. G. Schneider and H. J. Uhl. A Comparison of Several Methods for the Analysis of Gasoline and the Determination of the Molecular Weights of the Olefins Present in Cracked Naphthas.
37. Charles Van Brunt and Arthur J. Sherburne. The Effect of Surfaces on the Oxidation of Oils.

Refinery - Tank Wagon Markets

National Petroleum News

Gasoline Demand Declines in Oklahoma and Texas; Export Business Quiet

TULSA, Aug. 25

RISING kerosene prices and a decline in the gasoline demand featured the Mid-Continent market the week ended Aug. 25. Kerosenes advanced from 0.25 to 0.375 cent in all sections. The total number of cars of gasoline sold each day decreased steadily, according to figures compiled by *Platt's Oilgram*, and only one small sale of gasoline for export was reported.

Distillate, gas oil and fuel oils were unchanged in price, but the fractional advance in prices of the week before was still in effect.

Neutral oils and cylinder stocks were unchanged in price and demand. Wax prices were 0.25 cent higher and goods were reported hard to obtain.

Natural gasolines passed an uneventful week. The demand was fair and prices were unchanged. Only one large sale was reported and that was of off-specifications goods.

Gasolines

For the first time since early summer Oklahoma refiners have had competition into the Standard Oil Co. of Indiana territory from Texas in their gasoline business with the result that while jobbers from that territory have taken out the goods their contracts required of them, they have not come into the open market for as much gasoline as they were purchasing a few weeks ago, and Oklahoma sellers had to seek orders.

The situation is a direct result of the decrease in export activity. There was a 500,000-gallon increase in gasoline stocks in Texas the week ended Aug. 17 and the week prior to that there was a decrease of more than a million gallons.

In the week ended August 25, there was only one sale of export gasoline, that being 250,000 gallons at 10.25 cents, while the week before approximately 2,000,000 gallons was sold, and at 0.25 to 0.375 cent advance over prices of the week before. Domestic demand in north Texas has been insufficient to absorb the surplus accumulating as refiners have caught up with their export orders booked a month or two ago when export buying was at its peak.

As the demand fell prices declined and Aug. 25, 58-60 U. S. Motor was selling in Texas at 9.375 to 9.625 cents, in comparison with 9.75 cents Aug. 20.

Oklahoma refiners suffered only insofar as shipments were concerned. Prices were steady all week with sales of U. S. Motor ranging from 9.50 to 10 cents.

Neither Arkansas, Louisiana nor Kansas refiners were affected by the Texas condition, however, and price increases occurred in both Louisiana and Kansas. The Arkansas price of 58-60 U. S. Motor held all week, and Aug. 25 refiners there reported they were sold up and had more orders than they could care for. The Kansas price went up 0.125 cent to range from 9.875 to 10 cents while the Louisiana price moved to 10.50 flat from a range of 10.25 to 10.50 cents. Kansas refiners are still being pressed for gasolines and at least one has been covering on some orders from Group 3 refiners.

Few quotations for September shipment have been heard except in Texas where it was reported Saturday, that some U. S. Motor business had been placed at 9.50 cents for over the first 15 days. Oklahoma refiners are reluctant to quote and seem about evenly divided on the issue as to what the price will be. Many think that present prices will govern the quotations. Kansas, Louisiana and Arkansas refiners, being sold up, have made no quotations although refiners in each state have reported inquiries were being received.

Natural Gasolines

Natural gasolines sold at 10.75 cents all week. Demand was better. One company bought approximately 100 cars of off-specification goods at 10.50 cents, the sale constituting the only one of any size consummated. In Texas and Louisiana natural gasolines were in slightly better shape than they were in Oklahoma due to the fact that most of the goods manufactured there is under contract and only a minor amount is offered on the spot market.

Only a small amount of natural gasoline export business was done and the demand fell off at the end of the week because of the proximity of the end of the month. Most buyers have filled the requirements by the 25th of the month and several cease activity after the 21st.

Kerosene

There were advances in kerosene prices in every state of the Mid-Continent field and orders were booked at prices higher than have obtained since September and October, 1925.

The Oklahoma price for 41-43 water white advanced to 6.375 to 6.625 cents from 6.25 cents Aug. 20, and 42-44 w.w. kerosene, which Aug. 20 was 6.75 cents, ranged Aug. 25 from 6.875 to 7.125 cents. The Kansas price advanced 0.25 cent to 6.75 cents. The Louisiana price advanced from 6.25 to 6.75 cents, and the Arkansas price remained the same at 6.75 cents. Texas sellers were obtaining 0.125 to 0.25 cent more. Arkansas refiners say there is little kerosene available in that state for spot shipment and that it is not a question of obtaining a price for goods but a question of obtaining material.

In Oklahoma 42-44 kerosene is virtually unobtainable. The 41-43 w.w. grade is also scarce and sellers are taking care only of their regular customers. Some instances were reported where refiners had covered on the open market at a loss to protect some of their jobbing trade. Group 3 refiners account for the increased demand from farming districts where tractors are used for late harvesting and fall plowing.

Distillate, Gas and Fuel Oil

Heavy oils have been in fair demand all week but have not changed in price. There is a good demand from the trade for gas oil and a number of refiners are cracking part of their output.

Fuel oils showed a slightly better tone throughout the Mid-Continent although the volume of business done

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Aug. 27	Prices Aug. 20	Prices Aug. 13
52-54 Napthha	11.00 –11.75	11.00 –11.50	10.75 –11.00
54-56 Naphtha	11.50 –11.75	11.00 –11.25	10.75 –11.00
58-60 U.S. Motor 437 e.p.	12.00 –12.25	11.75 –12.00	11.25 –11.50
60-62 400-410 e.p. gasoline	12.50 –12.75	12.25 –12.50	11.50 –12.00
64-66 390 e.p. gasoline	13.50 –13.75	12.75 –13.00	12.00 –12.50
68-70 Str-run gas. 350-360 e.p.	14.50 –15.00	13.00 –14.00	13.00 –13.50
OHIO (Quotation of S. O. Ohio.)			
58-60 U.S.Motor,delivered in Ohio, tax to be added	No spot quotations		
OKLAHOMA			
48-50 540 e.p. naphtha	†9.00 – 9.125	†9.00 – 9.125	†8.75
50-52 450 e.p. naphtha	†9.00 – 9.125	†9.00 – 9.125	†8.75
56-58 450 e.p. gasoline	9.25 – 9.50	9.25 – 9.50	9.125– 9.25
58-60 450 e.p. gasoline	9.25 – 9.50	9.25 – 9.50	9.25
64-66 390 e.p. gasoline	10.50 –10.75	10.50 –10.75	10.50
68-70 350-360 e.p. gasoline	11.00	11.00	10.75 –11.00
OKLAHOMA (Weighted Average Prices)			
58-60 U.S. Motor, 437 e.p.	9.6886	9.7500	9.6850
60-62 437 e.p. gasoline	9.9375	10.0938	9.9861
60-62 400 e.p. gasoline	10.3500	10.3542	10.3571
64-66 375 e.p. gasoline	10.7500	11.0000	10.8333

Above are weighted average prices, current week's prices being effective on Saturday, instead of Monday, the last day on which weighted averages are available for publication in this table. Weighted average prices for the current Monday are published on page 102 of this issue. The two previous weeks' prices shown are corrected to show Monday's prices, effective on the dates shown at the top of the columns.

KANSAS (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	9.875–10.00	9.875	9.75 – 9.875
60-62 400 e.p. gasoline	10.50	10.50	10.25
64-66 375 e.p. gasoline	10.75	10.75	10.75
NORTH TEXAS			
48-52 450 e.p. naphtha	†9.00	†9.00	†9.00
56-58 450 e.p. gasoline	†9.00	†9.00 –	†9.00
58-60 450 e.p. gasoline	†9.125	†9.25 – 9.50	†9.25
58-60 U.S. Motor 437 e.p.	9.375– 9.50	9.75	9.75
60-62 400 e.p. gasoline	10.25	10.25	10.25
64-66 390 e.p. gasoline	10.375	10.50	10.375–10.50
64-66 375 e.p. gasoline	10.50–10.625	10.625–10.75	10.625–10.75
68-70 350-360 e.p. gasoline	11.00	11.00	10.75 –11.00
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	**10.50	**10.25–10.50	10.25
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	9.75	9.75	9.00
58-60 450 e.p. gasoline	10.00	10.00	9.25
58-60 U.S. Motor 437 e.p.	10.50	10.50	10.25
‡CALIFORNIA			
54-58 U.S. Motor 437 e.p	9.00 –12.50	9.00 –12.50	9.00 –12.50
58-61 U.S. Motor 437 e.p.	9.50 –13.50	9.50 –13.50	9.50 –13.50
42-45 Eng. dis. 445-480 e.p.	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	10.625–10.75	10.75	10.75
Grade A, 72-79.9, 90% Recovery	10.625–10.75	10.75	10.75
Grade BB, 84-92, 85% Recovery	10.625–10.75	10.75	10.50
Grade B, 76-83.9, 85% Recovery	10.625–10.75	10.75	10.50
Grade C, 80-92, 78% Recovery	10.625–10.75	10.75	10.50
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	10.625–10.75	10.75	10.75
Grade A, 72-79.9, 90% Recovery	10.625–10.75	10.75	10.75
Grade BB, 84-92, 85% Recovery	10.625–10.75	10.75	10.50
Grade B, 76-83.9, 85% Recovery	10.625–10.75	10.75	10.50
Grade C, 80-92, 78% Recovery	10.625–10.75	10.75	10.50
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†10.75–11.00	†11.00	†11.00
Grade BB	†10.75–11.00	†11.00	†10.75 –11.00
Grade C	†10.75–11.00	†11.00	†10.75 –11.00
CALIFORNIA			
75-85, 375-390 e.p. blend	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00

MOTOR FUEL BLENDS

OKLAHOMA			
64-66 Blend 437 e.p.	none available		†9.50

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	7.00 – 7.25	6.75 – 7.00	6.50
46 w.w. kerosene	7.50 – 7.75	7.00 – 7.25	6.75 – 7.00
47 w.w. kerosene	7.75 – 8.25	7.25 – 7.50	7.00 – 7.25
300 mineral seal	7.50 – 7.75	7.50 – 7.75	7.25 – 7.75
OKLAHOMA			
41-43 w.w. kerosene	6.50– 6.625	6.25	6.00
42-44 w.w. kerosene	6.875– 7.125	6.50	6.25 – 6.50
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	6.75	6.50	6.25
42-44 w.w. kerosene	7.00 – 7.25	6.75	6.50 – 6.75
NORTH TEXAS			
40-42 w.w. kerosene	6.00	5.75	5.75
41-43 w.w. kerosene	6.25	6.00	6.00
NORTH LOUISIANA (N. La. Ark. and Miss. destination)			
41-43 w.w. kerosene	6.75 – 7.00	6.50	6.00 – 6.25
ARKANSAS (Arkansas destination only)			
42-44 kerosene	6.75	6.75	6.50
CALIFORNIA			
38-40 w.w. kerosene	5.75 – 6.50	5.50 – 6.00	5.50 – 6.00

NEUTRAL OIL

Vis.				
PENNSYLVANIA		(Viscosity at 70°F.)		
200	No. 3 Assoc. Filt.	30.00 –32.00	30.50 –32.00	31.50 –33.00
180	No. 3 Assoc. Filt.	29.50 –30.00	28.00 –30.00	30.00 –31.50
150	No. 3 Assoc. Filt.	25.00 –26.50	25.00 –26.00	25.50 –27.00
		(Non Viscous)		
34	Grav. 330-340 Flash	7.50 – 9.00	7.50 – 9.00	7.50 – 9.00
36	Min. Neut, 300-305 Flash	6.00 – 8.50	6.50 – 7.50	6.50 – 7.50
****OKLAHOMA**				
Vis.	Color	(Viscosity at 100°F.)		
100	No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150	No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150	No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180	No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180	No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180	No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200	No. 3	9.625–11.00	9.625–11.00	9.625–11.00
200	No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200	No. 5	8.50 –10.00	8.50 –10.00	8.50 –10.00
220	No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220	No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220	No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240	No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240	No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240	No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280	No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280	No. 4	15.25	15.25	15.25
280	No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300	No. 5-6	17.00	17.00	17.00
GULF COASTAL				
Vis.	Color	(Viscosity at 100°F., pour test 0)		
100	No. 2 Unfilt. Pale	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
200	No. 3 Unfilt. Pale	10.50 –10.75	10.50 –10.75	10.50 –10.75
300	No. 3 Unfilt. Pale	11.50 –11.75	11.50 –11.75	11.50 –11.75
500	No. 3½ Unfilt. Pale	13.50 –13.75	13.50 –13.75	13.50 –13.75
750	No. 4 Unfilt. Pale	15.75 –16.00	15.75 –16.00	15.75 –16.00
200	No. 5½ Red Oil	8.50 – 8.75	8.50 – 8.75	8.50 – 8.75
300	No. 5½ Red Oil	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
500	No. 6 Red Oil	11.00 –11.25	11.00 –11.25	11.00 –11.25
750	No. 6 Red Oil	13.75 –14.00	13.75 –14.00	13.75 –14.00
CALIFORNIA				
Vis.	Color	(Viscosity at 100°F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300	No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450	No. 3	15.50 –16.00	15.50 –16.00	15.50 –16.00
550	No. 3	16.50 –17.00	16.50 –17.00	16.50 –17.00
600	No. 3	17.00 –17.50	17.00 –17.50	17.00 –17.50
200	No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300	No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400	No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500	No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600	No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700	No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

CYLINDER STOCKS

****OKLAHOMA**			
190-200 Vis.at 210° Brt.St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis.at210° Brt.St.	25.00 –26.00	25.00	23.00 –25.00
600 E.St.140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.00 –10.00	8.00 –10.00	8.00 –10.00
600 St. Ref. Dark Green	6.00 – 8.00	6.00 – 8.00	6.00 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	(1-inch Immersion Test)		
600 Steam Refined	13.00 –14.00	12.50 –13.50	12.50 –13.50
650 Steam Refined	14.50 –16.50	14.50 –16.50	14.50 –15.50
600 Flash	18.00 –19.50	18.00 –18.50	17.50 –18.50
625 Flash	26.00 –29.00	26.00 –28.00	26.00 –29.00
600 Warren E	19.00 –20.00	18.50 –19.00	18.50
600 Oil City E	18.00 –18.50	17.00 –18.00	16.00 –17.50
600 D Filtered	24.00	22.50 –24.50	22.50 –24.50
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No.8color	36.50	36.00 –36.50	36.00 –36.50
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	34.50	34.00 –34.50	34.00 –34.50

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations

Announcing OUR NEW EMBLEM

The original "Hall-marks" of Goldsmiths' Hall, London, were official assay marks attesting that silver assayed up to the standard required by law. Hence the term, "hall-mark" has come to mean a mark attesting unquestioned quality.

More than a trade-mark,-a "HALLMARK" of QUALITY

In announcing our adoption of a new official emblem, our "IND-O-SEAL" shown above—we are doing more than to merely call the industry's attention to a new trade-mark. We have invested this seal with the dignity of an absolute *guarantee*—a *warranty*—that the product displaying it is of exceptionally high quality. It thus becomes a "hall-mark"—a mark of *certified quality*.

This mark will identify our "IND-O-SEAL" products—IND-O-LUBE Motor Oils, Greases, Bright Stocks and Neutrals—INDO-O-LENE Gasoline —IND-O-LITE Kerosene. It is our *guarantee* that IND-O-SEAL petroleum products are *"the cream of the crude"*, refined from the very best of Midcontinent paraffin-base petroleum—that they are prepared for market by the most modern refining methods known—that they definitely represent the highest quality obtainable.

The Jobber who is seeking a line of assured quality is asked to get in touch with us.

INDEPENDENT OIL AND GAS COMPANY

Producers — Refiners — Marketers

Tulsa, Oklahoma

Cable Address "Indol"

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices Aug. 27	Prices Aug. 20	Prices Aug. 13
Per pound, New York			
122-124 white crude scale	5.00 – 5.25	4.75	4.75
124-126 white crude scale	5.00 – 5.125	4.75	4.75
OKLAHOMA			
**124-126 White Crude Scale	4.75	4.50 – 4.75	4.25
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	4.625– 4.875	4.75 – 5.00	4.75 – 5.00
30-34 fuel oil	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
28-32 fuel oil	4.25 – 4.375	4.125– 4.50	4.125– 4.50
OKLAHOMA			
38-40 straw distillate	3.00 – 3.25	3.00 – 3.125	3.00
36-38 straw distillate	2.875– 3.00	2.875	2.75 – 2.875
32-36 gas oil, straw	†2.50 – 2.75	†2.50 – 2.75	†2.50 – 2.75
32-36 dark gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
28-30 fuel oil (in bbls.)	$0.85 – 0.875	$0.85 – 0.875	$0.85 – 0.875
26-28 fuel oil (in bbls.)	$0.675– 0.725	$0.675– 0.725	$0.675– 0.725
24-26 fuel oil (in bbls.)	**$0.65– 0.675	**$0.65– 0.675	**$0.65– 0.675
22-26 fuel oil (in bbls)	**$0.575–0.625	**$0.575–0.625	**$0.575–0.625
18-22 fuel oil (in bbls.)	**$0.55– 0.60	**$0.55– 0.60	**$0.55– 0.60
16-18 fuel oil (in bbls.)	**$0.55	**$0.55	**$0.55
14-16 fuel oil (in bbls.)	**$0.55	**$0.55	**$0.55
KANSAS (F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.50 – 3.625	3.50 – 3.625	3.50
36-38 straw distillate	3.125– 3.375	3.125– 3.375	3.125
32-36 gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
24-26 fuel oil	*$0.75– 0.80	*$0.75– 0.80	*$0.75– 0.80
18-22 fuel oil	*$0.70	*$0.70	*$0.70
NORTH TEXAS			
38-40 straw distillate	3.00	2.875– 3.00	2.875– 3.00
32-36 gas oil, cracked	2.375– 2.50	2.25 – 2.375	2.25 – 2.375
32-36 gas oil, uncracked	2.375– 2.50	2.25 – 2.375	2.25 – 2.375
24-26 fuel oil (in bbls.)	$0.525– 0.55	$0.525– 0.55	$0.525– 0.55

GULF COASTAL	Prices Aug. 27	Prices Aug. 20	Prices Aug. 13
Fuel (in bbls.)	$1.20 –$1.25	$1.20 –$1.25	$1.20 –$1.25
Gas oil	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	2.625– 2.875	2.625– 2.875	2.625– 2.875
32-36 gas oil, straw	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
16-20 fuel oil (in bbls.)	$0.70	$0.70	$0.70
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
28-32 gas oil	2.75	2.75	2.75
Road Oil	$1.15	$1.15	$1.15
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.65 –$0.70	$0.65 –$0.70	$0.65 –$0.70
14-18 Bunker oil (in bbls.)	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
30-34 gas oil (in bbls.)	$1.00 –$1.20	$1.00 –$1.20	$1.00 –$1.20
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. In tank cars ¾c to ¾c per pound less.) Quotations of two refiners.			
Snow White	††8.50	8.25 – 8.50	8.25 – 8.50
Lily White	††7.50	7.25 – 7.50	7.25 – 7.50
Cream White	††6.50	6.25 – 6.50	6.25 – 6.50
Light Amber	††3.50	3.50 – 3.625	3.50
Amber	3.25	3.25	3.25
Red	2.375 – 3.00	2.75 – 3.00	2.75 – 3.00

PETROLEUM COKE

****OKLAHOMA**

(Per ton in car lots)

Lump	$4.50 –$5.00	$4.50 – 5.00	$4.50 –$5.00
Still run	$3.00	$3.00	$2.75 –$3.00
Breeze	$2.00	$2.00	$1.75 –$2.00

†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents Both Sales and Quotations

has not been large enough to change the price situation. Higher quotations were being advanced August 25.

Neutral Oils, Cylinder Stocks, Wax

Neutral oils and cylinder stocks showed no changes in price although virtually all makers of these products said demand was good. Bright stocks were active with a number of sellers sold up over the first 15 days of September. One refiner said he had an opportunity to bid on two 5,000-barrel lots of 150 viscosity but was unable to do so as he was sold up for most of September. Some inquiries are being received for over November and one refiner quoted 26 cents on an order.

Sinclair Buying Offices Moving to Tulsa

TULSA, Aug. 27.—The Sinclair Refining Co. is consolidating its export purchasing activities for the Mid-Continent field in Tulsa, it was announced today by W. A. Tracy. Buying offices at Wichita Falls are being closed and new offices will be opened here under Mr. Tracy's direction on Sept. 1.

Offices will be located temporarily at 218 Mid-Continent building. As soon as the new 25-story addition to the Exchange National Bank Building is completed the offices will be moved to a permanent location in the new building.

California Natural Gasoline Strong in Quiet Market

Staff Special

LOS ANGELES, Aug. 25

EXPORT gasoline and fuel oil markets were quiet in California this week. Natural gasoline showed further strength and kerosene was quoted slightly higher. Much attention is attracted to the effort to clarify the retail gasoline price situation. At the close of the week it was indicated this situation is showing marked improvement, as a large number of Independent service station owners have taken down their cut price signs and are selling at the standard service station price of 20.50 cents.

Some of the major refiners are still asking 9 cents and up for export U. S. Motor, but it could still be purchased at 8.50 to 8.75 cents. Buyers claim they cannot pay more than 8.50 cents and compete with prevailing prices on the east coast. Prices at the Gulf are being watched very closely.

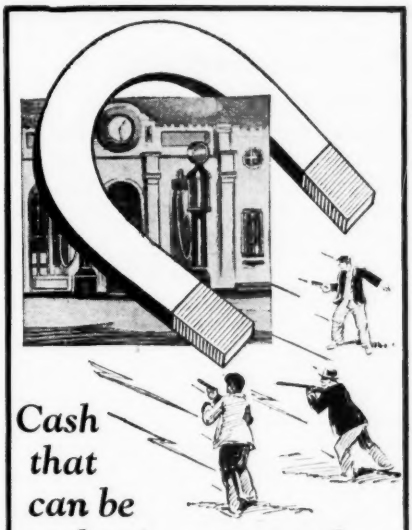
Fuel oil continues plentiful. Most of the refiners ask 70 cents and up for their fuel in cargo lots. Buyers are slow in making purchases, hoping for lower prices because of the large increase in fuel oil stocks on the Pacific coast.

Fuel oil in tank cars holds at 65 to 70 cents, with a few cars moving each week in the spot market. A very large percentage of fuel oil moved is on contracts over fairly long periods.

Natural gasoline is plentiful and stocks are piling up, but due to the fact that a very large part of the daily production is either under long time contract or produced by major companies, the spot price is holding firm.

A few cars were available this week at 6.50 to 6.75 cents with some manufacturers refusing to sell at less than 7 cents. The natural gasoline manufacturers are feeling better over reports that plans are being worked out to export considerable of this product. Rumors are that Shell Co. has contracted to furnish New Orleans Refining Co. with several cargoes, but this report has not been verified.

It is known that certain east coast interests would like to ship California



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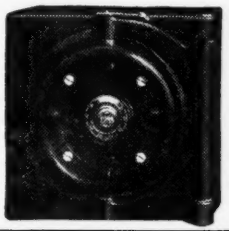

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natural gasoline through the canal but unless the shipper owns his own tanker and carries his own insurance, the product must be blended until it will meet shipping insurance requirements.

It is understood that the natural gasoline must be around 96 per cent recovery with a vapor pressure reduced to about 6 pounds. To do this, it would be necessary to blend the product with about 25 per cent straight run gasoline. This would increase the cost of the product.

Loading problems also enter into the arrangements. No company at this time has arranged to hold large quantities of natural gasoline at the point of loading. Arrangements may be worked out.

Natural gasoline can be purchased in quantities in southern California at 7 to 7.50 cents a gallon. The tanker rate to east coast or Gulf points would be about 2 cents a gallon. This would make it possible to lay down this product, after blending to make it safe, at a cost of about 10 cents. This figure makes provision for allowing additions to cover cost of blending, etc. Natural gasoline is selling in tank cars in Oklahoma at 10.50 cents and the freight to New York territory would be about 5 cents a gallon.

The quality of the natural gasoline produced in California is showing an almost constant improvement until most of the product now made has a recovery of about 90 against 80 two years ago and an average of about 85 one year ago. The present product has a vapor pressure of between 10 and 12 pounds.

At least 90 per cent of the natural gasoline in storage in California is held as a blend, or in crude oil. Standard of California runs most of its natural gasoline production directly into crude oil pipe lines, while most of the other large refiners place the natural gasoline in vapor proof steel tanks, blended about 50-50 with straight run gasoline.

Kerosene is stronger, with few refiners making it. Most of the small refiners do not care to make kerosene and do not solicit orders. As a result kerosene in tank cars is held at 5.75 to 6.50 cents a gallon while the product is moving for export at 5.50 to 6 cents, although one major refiner refuses any business even at the higher figure.

LOS ANGELES, Aug. 25.—James A. Talbot, president of Richfield Oil Co. of California, is in New York City in connection with the listing of Richfield stock and also working out further details with reference to the exchange of Pan American Western stock for Richfield stock.

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STURDINESS and excellent cork-gripping qualities made them dependable. Handsome appearance makes them attractive. Fine perfume glass and cut and polished bottoms (if desired) make them truthful—distortionless. Just the qualities you demand in a good salesman. 2-4-8 ounce sizes. Sample on request.

Illinois Glass Company . . . Alton Ill.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for 1927, 1926, 1925, 1924 arranged for quick reference)

These Prices in Effect Aug. 27, 1928, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Atlantic City, N. J.	17	2	19	20	14
Newark, N. J.	17	2	19	20	14
Annapolis, Md.	17	4	21	23	14
Baltimore, Md.	17	4	21	23	11
Cumberland, Md.	17	4	21	23	14
Washington, D. C.	17	2	19	21	14
Danville, Va.	17	5	22	*	14
Norfolk, Va.	14	5	19	20	14
Richmond, Va.	17	5	22	24	14
Roanoke, Va.	17	5	22	24	14
Petersburg, Va.	17	5	22	24	14
Charleston, W. Va.	17	4	21	23	14
Keyser, W. Va.	17	4	21	23	14
Parkersburg, W. Va.	17	4	21	23	14
Wheeling, W. Va.	17	4	21	23	14
Charlotte, N. C.	17	4	21	23	14
Hickory, N. C.	17	4	21	23	14
Mt. Airy, N. C.	17	4	21	23	14
Salisbury, N. C.	17	4	21	23	14
Charleston, S. C.	17	5	22	24	14
Columbia, S. C.	17	5	22	24	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	18	0	18	*20	15
Albany, N. Y.	18	0	18	21	15
Buffalo, N. Y.	18	0	18	20	15
Rochester, N. Y.	18	0	18	20	13
Syracuse, N. Y.	18	0	18	20	15
Boston, Mass.	18	0	18	20	15
Augusta, Me.	18	4	22	24	15
Manchester, N. H.	18	4	22	24	15
Burlington, Vt.	18	3	21	23	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	18	*	18	*23	14
Philadelphia, Pa.	18	*	18	*23	14
Allentown, Pa.	18	*	18	*23	14
Erie, Pa.	18	*	18	*23	14
Scranton, Pa.	18	*	18	*23	14
Altoona, Pa.	18	*	18	*23	14
Dover, Del.	18	3	21	23	14
Wilmington, Del.	18	3	21	23	14
Providence, R. I.	18	2	20	22	15
Boston, Mass.	18	0	18	20	15
Springfield, Mass.	18	0	18	20	15
Worcester, Mass.	18	0	18	20	15
Hartford, Conn.	18	2	20	22	14
New Haven, Conn.	18	2	20	22	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Ashland, Ky.	16	5	21	23	15.5
Catlettsburg, Ky.	16	5	21	23	15.5
Lexington, Ky.	15	5	20	22	15.5
Louisville, Ky.	15	5	20	22	14
Covington, Ky.	16	5	21	21	15.5
Clarksdale, Miss.	16	4	21	22	13
Gulfport, Miss††	17.5	4	21.5	23.5	14
Jackson, Miss.	16	4	20	22	14.5
Natchez, Miss.	15.5	4	19.5	21.5	14
Vicksburg, Miss.	15.5	4	19.5	21.5	14
Birmingham, Ala.	16	4	20	22	16
Mobile, Ala‡	18	4	22	24	15
Montgomery, Ala.*	19	4	23	25	16.5
Atlanta, Ga.	18	4	22	24	†16.5
Augusta, Ga.	18	4	22	24	†15.5
Macon, Ga.	18	4	22	24	†16.5
Savannah, Ga.	17	4	21	21	†14.5
Jacksonville, Fla.	17	5	22	24	13.5
Miami, Fla.	18	5	23	25	15.5
Tampa, Fla.	17	5	22	25	13.5
Pensacola, Fla.**	18	5	23	25	13.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Chicago, Ill.	15	0	15	17	12
Decatur, Ill.	15.2	0	15.2	17.2	12.1
E. St. Louis, Ill.	14.1	0	14.1	16.35	11.2
Joliet, Ill.	15.4	0	15.4	17.4	12.3
Peoria, Ill.	15.2	0	15.2	17.2	12.1
Quincy, Ill.	15.2	0	15.2	17.2	11.9
Indianapolis, Ind.	15.2	3	18.2	20.2	13.2
Evansville, Ind.	15	3	18	20	13
South Bend, Ind.	15.4	3	18.4	20.4	13.4
Detroit, Mich.	15.8	3	18.8	20.8	13.7
Grand Rapids, Mich.	15.7	3	18.7	20.7	13.6
Saginaw, Mich.	15.9	3	18.9	20.9	13.8
Green Bay, Wis.	15.6	2	17.6	19.6	12.4
Madison, Wis.	15.3	2	17.3	19.3	12.1
Milwaukee, Wis.	15.1	2	17.1	19.1	11.9
La Crosse, Wis.	16.2	2	18.2	20.2	13
Minneapolis, Minn.	16.2	2	18.2	20.2	12.9
Duluth, Minn.	16.5	2	18.5	20.5	12.9
Mankato, Minn.	16.1	2	18.1	20.1	12.7
Des Moines, Ia.	15.5	3	18.5	20.5	12.3
Davenport, Ia.	15.5	3	18.5	20.5	12.3
Sioux City, Ia.	15.1	3	18.1	20.1	11.9
Mason City, Ia.	15.5	3	18.5	20.5	12.3
St. Louis, Mo.	*14.6	2	16.6	18.9	11.3
Kansas City, Mo.	†15.9	2	17.9	19.9	10.6
St. Joseph, Mo.	†15.5	2	17.5	19.5	11.2
Fargo, N. D.	17.9	2	19.9	21.9	14.9
Grand Forks, N. D.	18.2	2	20.2	22.2	15.2
Minot, N. D.	17.9	2	19.9	21.9	14.9
Pierre, S. D.	16.5	4	20.5	22.5	13.9
Huron, S. D.	16.5	4	20.5	22.5	13.9
Wichita, Kans.	13.8	2	15.8	17.8	10.8
Bartlesville, Okla.	13.5	3	16.5	18.5	10.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline is ½c for 750 gals. or more a month; 1c for 2,000 gals. or more a month; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month. All discounts adjusted annually.

*Includes city tax of ½c.

†Includes city tax of 1c.

CONTINENTAL OIL

Denver, Colo.	16	3	19	22	14.5
Pueblo, Colo.	16	3	19	22	14.5
Grand Junc., Colo.	19.5	3	22.5	25.5	18
Casper, Wyo.	16	3	19	22	13
Cheyenne, Wyo.	17	3	20	23	14.5
Butte, Mont.	20.5	3	23.5	26.5	19
Helena, Mont.	20.5	3	23.5	26.5	19
Salt Lake City, Utah	18.5	3½	22	25	17
Boise, Ida.	20.5	4	24.5	27.5	19
Twin Falls, Ida.	20.5	4	24.5	27.5	19
Albuquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	16	5	21	23	13
Alexandria, La.	15	2	17	19	†15
Baton Rouge, La.	14	2	16	18	†13.5
Lake Charles, La.	15.5	2	17.5	19.5	†15
New Orleans, La.	*15.5	2	*17.5	*19.5	†15
Shreveport, La.	15.5	2	17.5	19.5	†14
Lafayette, La.	15	2	17	19	†14.5
Bristol, Tenn.	18	3	21	23	14
Chattanooga, Tenn.	17.5	3	20.5	22.5	15
Knoxville, Tenn.	18	3	21	23	15
Nashville, Tenn.	17	3	20	22	15
Memphis, Tenn.	14	3	17	19	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
All Ohio points	16	3	19	20	14

S. O. NEBRASKA

Omaha, Neb.	15.25	2	17.25	19.25	12.25
McCook	16.75	2	18.75	20.75	13.75
Norfolk	15.75	2	17.75	19.75	12.75
North Platte	16.75	2	18.75	20.50	13.50
Scottsbluff	16.75	2	18.75	20.75	13.25

MAGNOLIA PETROLEUM

Muskogee, Okla.	16	3	19	21	11
Oklahoma City	15	3	18	20	11
Tulsa, Okla.	14	3	17	19	11
Fort Smith, Ark.*	14	*3	17	19	13
Little Rock, Ark.	16	5	21	23	13
Texarkana, Ark.*	14.5	*3	17.5	21.5	13
Dallas, Tex.	14	3	17	21	11
Fort Worth, Tex.	14	3	17	20	11
Houston, Tex.	14	3	17	21	15
San Antonio, Tex.	15	3	18	21	10
El Paso, Tex.	15	3	18	21	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		20	....

*Includes 2c state tax. †Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
ONTARIO					
Toronto	20.5	3	23.5	27	22
Ottawa	20.5	3	23.5	27	22
Cochrane	25.5	3	28.5	..	27
Ft. William	23.5	3	26.5	30	23.5
MANITOBA					
Winnipeg	22.5	3	25.5	29	22.5
SASKATCHEWAN					
Regina	27	3	30	34	27
ALBERTA					
Edmonton	27.5	3	30.5	34	27.5
Calgary	22.5	3	25.5	29	22.5
BRITISH COLUMBIA					
Vancouver	21	3	24	28	22
QUEBEC					
Montreal	21.5	5	26.5	30	22
Quebec City	22.5	5	27.5	31	23
Three Rivers	22.5	5	27.5	31	23
NEW BRUNSWICK					
St. John	23.5	3	26.5	30	25
Moncton	23.5	3	26.5	30	25
NOVA SCOTIA					
Halifax	23.5	5	28.5	32	25
Sydney	23.5	5	28.5	32	25
PRINCE EDWARD ISLAND					
Charlottetown	23.5	5	28.5	32	25

Note: In districts surrounding these points 1c additional is added to city price.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both Colorado, 1/10c on both; Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/50c on both; Nebraska, 3/50 to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5 to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of Ohio—T.w. and s.s. prices of gasoline advanced 1 cent, through Ohio, to 19 cents and 20 cents respectively, including 3 cent state tax, **Aug. 25.** Last previous change was a 1 cent increase on t.w. price only, on **Aug. 2.**

Standard of Kentucky—T.w. and s.s. prices gasoline cut 2 cents, Birmingham, to 20 cents and 22 cents respectively, including 4 cent state tax, **Aug. 22.**

Continental Oil—T.w. and s.s. prices gasoline advanced 1 cent, generally through Utah and Idaho with a few exceptions in Idaho, **Aug. 25.**

Magnolia Petroleum—T.w. and s.s. prices gasoline advanced 1 cent, San Antonio, to 15 cents and 18 cents respectively, including 3 cent state tax, **Aug. 22.**

* * *

Kerosene Changes

Standard of New Jersey—Kerosene prices reduced 1 cent, Baltimore, making new t.w. price 11 cents, **Aug. 27.**

Standard of Kentucky—Kerosene reduced 1.5 cents, Clarksdale, to 13 cents t.w., **Aug. 9.**

Magnolia Petroleum—Kerosene prices advanced 1 cent, Arkansas, making t.w. price generally 13 cents, **Aug. 14.**

Tanker Rates

NEW YORK, Aug. 27.—Approximate tanker freight rates in the following trades are, to Continental ports, in shillings per ton of 2240 pounds, British Sterling; to American ports, cents per barrels:

	Crude &/or Fuel	Refined Oil
Calif. to U.K. or Continental ports*	25/6	26/-
Gulf to U.K. or Continental ports*	15/	15/6
North Atlantic to U.K. or Continental ports*	12/	12/6
Calif. to North Atlantic ports (not E. of N. Y.)	50c	68-70c
**Gulf and North Atlantic ports (Not E. of N.Y.)	16-17c	25-27c

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.

LOS ANGELES, Aug. 25.—Graver Corp. has promoted L. W. Wichman to general superintendent of construction, refinery department, with headquarters at Chicago. Mr. Wichman for some time has been in California in charge of refinery construction on the Pacific coast, and is being succeeded by Harry Smith, formerly of Chicago.

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We manufacture the simplest to the most elaborate Stations. Put your own individuality in your Filling Stations—Let us help you work this out.

The Edwards Manufacturing Co

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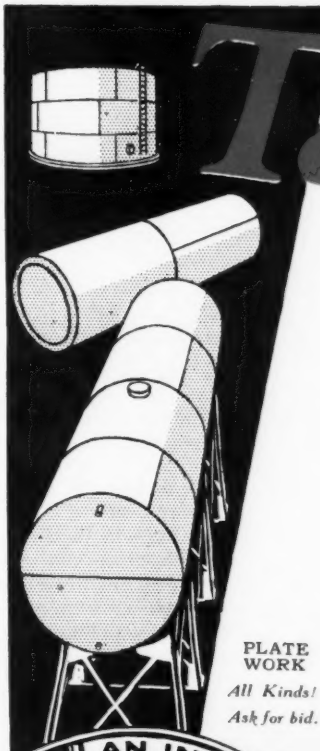
Tanks



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AN INGALLS BIRTANK PRODUCT

BIRMINGHAM TANK CO.

BIRMINGHAM, ALA.

Crude Oil Prices (in Effect Aug. 27)

(Crude prices for years 1924-1925-1926-1927 in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$3.20
Bradford District Oil in National Transit Lines (Bradford District)	3.20
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	3.10
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	3.10
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.00
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.85
Keister Grade in National Transit Lines (Butler Co.)	1.20
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.45
Corning Grade in Buckeye Pipe Lines (Ohio)	1.80
Corning, O., heavy grade	1.70
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.70
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.55

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective July 27, 1928

Wooster	$1.67	Princeton	$1.55
Lima	1.60	Illinois	1.55
Waterloo	1.20	Plymouth	1.28
Indiana	1.37	West Kentucky	1.48

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$2.00
Oil Springs	2.07

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective July 26, 1928

Below 25	$0.60	35-35.9	$1.31
25-25.9	0.67	36-36.9	1.36
26-26.9	0.74	37-37.9	1.41
27-27.9	0.81	38-38.9	1.46
28-28.9	0.88	39-39.9	1.51
29-29.9	0.95	40-40.9	1.56
30-30.9	1.02	41-41.9	1.61
31-31.9	1.09	42-42.9	1.66
32-32.9	1.16	43-43.9	1.71
33-33.9	1.21	44 and above	1.76
34-34.9	1.26		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

July 26, same schedule as Prarie.

Mirando, Tex.	$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

July 26, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 25	$0.60	26-26.9	0.74
25-25.9	0.67	27-29.9	0.75
30-30.9			0.90
31-31.9			1.05
Glasscock, Crane, Upton, Winkler Counties			0.65
Chalkfield (Howard Co.)			0.80
Iatan district			0.93
Corsicana heavy			1.00

Carter Oil Co.

(Oklahoma and Kansas)

July 26, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Hutchinson and Carson Counties:

Below 32	$0.69	38-38.9	$1.06
32-32.9	0.76	39-39.9	1.11
33-33.9	0.81	40-40.9	1.16
34-34.9	0.86	41-41.9	1.21
35-35.9	0.91	42-42.9	1.26
36-36.9	0.96	43-43.9	1.31
37-37.9	1.01	44 and above	1.36

Wheeler County:

Below 30	$0.65	37-37.9	$1.11
30-30.9	0.72	38-38.9	1.16
31-31.9	0.79	39-39.9	1.21
32-32.9	0.86	40-40.9	1.26
33-33.9	0.91	41-41.9	1.31
34-34.9	0.96	42-42.9	1.36
35-35.9	1.01	43-43.9	1.41
36-36.9	1.06	44 and above	1.46

Gray County:

Below 29	$0.68	37-37.9	1.21
29-29.9	0.75	38-38.9	1.26
30-30.9	0.82	39-39.9	1.31
31-31.9	0.89	40-40.9	1.36
32-32.9	0.96	41-41.9	1.41
33-33.9	1.01	42-42.9	1.46
34-34.9	1.06	43-43.9	1.51
35-35.9	1.11	44 and above	1.56
36-36.9	$1.16		

WEST TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Winkler, Crane, Upton, Crockett, and Pecos Counties	$0.65

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective July 26, 1928

Below 28	$0.81	36-36.9	$1.36
28-28.9	0.88	37-37.9	1.41
29-29.9	0.95	38-38.9	1.46
30-30.9	1.02	39-39.9	1.51
31-31.9	1.09	40-40.9	1.56
32-32.9	1.16	41-41.9	1.61
33-33.9	1.21	42-42.9	1.66
34-34.9	1.26	43-43.9	1.71
35-35.9	1.31	44 and above	1.76

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.75
do 24 and above	.90
Bellevue	1.25
*Urania, La.	.85
†East El Dorado	0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La. Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia on Feb. 6 by La. Oil Refg. Corp.

Aug. 8 The Texas Co., same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.60; 25-25.9, $0.67; 26-26.9, $0.74; 27-27.9, $0.81.

Aug. 7 Magnolia Petroleum met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Aug. 2, 1928

Below 28	$0.75	30-30.9	$0.87
28-28.9	0.79	31-31.9	0.91
29-29.9	0.84	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

Largest Loss in Gasoline Stocks in July

NEW YORK, Aug. 23.—A third consecutive decrease in crude stocks and the largest decrease in gasoline stocks this year occurred in July, according to a preliminary report of the American Petroleum Institute.

Pipe line and tank farm gross domestic crude stocks east of the rockies fell off 749,000 barrels in July, compared with a decrease of 1,389,000 barrels in June and 665,000 barrels in May.

Gasoline stocks fell off 2,867,000 barrels during July east of California at plants operating at 89 per cent of their capacity. This compares with a decrease of 2,202,000 barrels in June and 2,067,000 barrels in May.

A net decrease of 892,000 barrels occurred in refinery stocks of all oils during July. This compares with a net decrease of 473,000 barrels in June.

Lubricating oil stocks also decreased, falling off 77,000 barrels during July, compared with a decline of 144,000 barrels in June.

Kerosene, gas and fuel oil stocks again increased, kerosene gaining 56,000 barrels in July, compared with an increase of 632,000 barrels in June. Gas and fuel oil stocks increased 2,022,000 barrels, compared with an increase of 2,597,000 barrels in June.

Refinery stocks of foreign and domestic crude oil showed a net decrease of 269,000 barrels in July, compared with a net decrease of 919,000 barrels in June.

Gulf Coastal Lubes Quiet

HOUSTON, Aug. 27.—Satisfactory conditions at unchanged prices were reported in Gulf Coastal lubricants market over the past week, except for a lull in buying over the week end. Jobbers have taken out larger quantities of goods than was due in the first half of the month and the time has not appeared for shipments against winter requirements.

Air Mail Losses Few

NEW YORK, Aug. 25.—A total of 159,843,096 letters were transported by air mail during 1922, 1923 and 1924, of which only 125 pounds or approximately 5000 letters were lost or destroyed, according to the Department of Commerce and A. E. C. Joint Report on civil aviation. This is about half the percentage of losses of registered packages transported by the railroads.

The eastern and southwestern divisions of the air mail service, which operates between New York, Chicago and Dallas, which has been operating for two years, have never lost a piece of mail or express by fire, the report said.

Up to Oct. 31, 1927 the Department of Commerce reported that since 1918 the U. S. air mail had flown 20,000,000 miles, carrying 9,000,000 pounds of mail, with the loss of only 2386 pounds.

Crude Oil Prices (in Effect Aug. 27)

(Crude prices for years 1924-1925-1926-1927 in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A.....$1.20	*Grades B.....$1.15
‡Grades B (light crude):	
35-35.9.....$1.37	38-38.9.....$1.43
36-36.9..... 1.39	39-39.9..... 1.45
37-37.9..... 1.41	40 and above... 1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective July 26, 1928)

‡Salt Creek 29-29.9	$0.95
" " 30-30.9	1.02
" " 31-31.9	1.09
" " 32-32.9	1.16
" " 33-33.9	1.21
" " 34-34.9	1.26
" " 35-35.9	1.31
" " 36-36.9	1.36
" " 37 and above	1.41
Elk Basin	1.48
‡Grass Creek light	1.48
Big Muddy	1.33
Lance Creek	1.48
Rock Creek	1.33
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.48
‡Cat Creek, Mont.	1.48
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.48
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85	$ .85
15-15.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
16-16.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
17 17.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
18-18.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
19-19.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
20-20.9	.85	.85	.85	....	.85	.85	....	....	.77	.77	.77	.77	.86	.85	.85
21-21.9	.89	.89	.89	....	.88	.88	.89	....	.79	.79	.79	.79	.89	.86	.86
22-22.9	.93	.93	.93	....	.91	.91	.92	....	.82	.82	.82	.82	.92	.87	.87
23-23.9	.97	.97	.97	....	....	.94	.95	....	.86	.86	.85	.85	.95	.90	.90
24-24.9	1.01	1.01	1.01	1.01	....	.97	.98	....	.90	.90	.88	.88	.98	.93	.94
25-25.9	1.05	1.05	1.05	1.05	....	1.00	1.01	....	.95	.95	.91	.91	1.01	.95	.98
26-26.9	1.09	1.09	1.09	1.09	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	.97	1.02
27-27.9	1.13	1.13	1.13	1.13	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	1.06
28-28.9	1.17	1.17	1.17	1.17	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	1.10
29-29.9	1.21	....	1.21	1.21	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	.....	1.14
30-30.9	1.25	....	1.25	1.25	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	1.18
31-31.9	1.30	....	....	1.30	....	....	1.25	....	1.28	1.28	1.14	....	....	....	1.23
32-32.9	1.35	....	....	1.35	....	.....	1.30	....	1.34	1.34	1.18	....	....	....	1.28
33-33.9	....	....	....	1.41	....	.....	1.35	....	1.40	1.40	1.22	....	....	....	....
34-34.9	....	....	.....	1.47	....	.....	1.40	....	....	1.46	1.26	....	....	....	....
35-35.9	....	....	....	1.53	....	....	1.45	....	....	....	1.30	....	....	....	....
36-36.9	....	....	....	1.59	....	....	1.50	....	....	....	....	....	....	....	....
37-37.9	....	....	....	1.65	....	....	1.55	....	....	....	....	....	....	....	....
38-38.9	....	....	....	1.71	....	....	1.60	....	....	....	....	....	....	....	....
39-39.9	....	....	....	1.77	....	....	1.65	....	....	....	....	....	....	....	....
40-40.9	....	....	....	1.83	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	1.89	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	1.95	....	....	....	....	....	....	....	....	....	....	....

*Union Oil Co. posts same prices in all above fields as Standard except in Montebello and Wheeler Ridge. It also posts Elwood Terrace at same prices as Rosecrans—Dominguez and also posts Santa Maria (Orcutt) and Ventura.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

Refiners' Supplies

	Aug. 27	Aug. 20
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, ...cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars.....cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, ...cwt.	$0.70-0.75	$0.70-0.75
Sal Soda wks.....	$0.90	$0.90
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton.....	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.....	$18.50	$18.50
Sulfur, flowers of.....cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks.....lb.	3.50-5.00	3.50-5.00
Litharge, powdered, casks, cwt.	8.75	8.75

Compounders' Supplies

	Aug. 27	Aug. 20
Vegetable Oils		
Linseed carloads, spot....lb.	9.70	9.70
Tanks, spot.....	8.90	8.90
Soya Bean, Tanks, coast, lb.	9.50	9.50–9.75
Oleic Acid		
Distilled, tanks.....lb.	9.00	9.00
Distilled, bbls.....lb.	9.75	9.75
Saponified, tanks.....lb.	9.25	9.25
Saponified, bbls.....lb.	10.00	10.00
Lard Oils		
Prime Winter Strained....lb.	15.75	15.75
Extra Winter Strained...lb.	13.00	13.00
Extra.....lb.	12.50	12.50
Extra No. 1.....lb.	12.25	12.25
No. 1.....lb.	11.50	11.50
No. 2.....lb.	11.125	10.125
Tallow oil.....lb.	11.375	11.375
Neatsfoot Oil		
Pure, bbls.....lb.	15.25	15.25
Extra, bbls.....lb.	12.50	12.50
No. 1 bbls.....lb.	11.75	11.75
Cold Pressed.....lb.	18.50	18.50
Fish Oils		
Menhaden Oil		
Light Pressed ..... gal.	60-61	60-61
Light Pressed, tank cars, N. Y. .....gal.	54-56	54-56
White bleached.....gal.	65-66	65-66
Yellow bleached.....gal.	66-68	66-68
Whale, extra winter bleached, ...gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y.....gal.	52	52
Steam distilled turpentine, Savannah.....gal.	47	47
Gum turpentine, N. Y....gal.	54.50	54.50
Gum turpentine, f.o.b. cars Savannah.....gal.	47.75	47.75
Wood Rosin F, N. Y.....bbl.	$8.30	$8.30
Wood Rosin F, Savn'h..bbl.	$7.50	$7.50
Gum Rosin B, N. Y.....bbl.	$8.90	$8.90
Gum Rosin B, f.o.b. cars Savannah ..... bbl.	$8.15	$8.15
Rosin oil, pure.....gal.	57	57
Rosin oil, compounded...gal.	47	47
Pine Tar		
Kiln burnt.....bbl.	$12.50-14.00	$12.50-14.00
Retort.....bbl.	$13.50-15.50	$13.50-15.50
Alcohol		
Denatured, Formula 5, in bbls., per gal.....	53-60	53-60

*Nominal.

Heil 600 gallon, 3 compartment, semi-elliptical tank mounted on Pierce Arrow truck

HEIL de luxe TANKERS Tailor-Made to Fit the Truck

COLONIAL OIL CO., Grand Rapids, Mich., is one of many successful oil companies now using Heil de luxe Truck Tanks as standard equipment. These tankers are traveling the streets and highways, everywhere in America, advertising as well as delivering the products of the firms owning them. Notice the beautiful body lines and the long graceful sweep from hood to can box. Heil has built great advertising value into the highest quality truck tank on the market. Heil engineers design every tank to fit the truck as well as to meet the needs, including all special requirements, of the operating companies. If you want the best in tank quality and design, specify Heil Truck Tanks—they're "tailor-made to fit the truck."

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Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended August 24 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Aug. 24	Total Week Ended July 27
Plants Reporting	12	29	29	12	82	80
Crude Capacity	92,000	160,200	130,100	54,900	437,200	431,700
Cracking Capacity	30,700	52,600	17,200	22,700	123,200	123,200
Da. Av. Crude Runs	79,937 + 7.8	121,389 — 4.8	98,683 + 9.4	56,455 — 10.2	356,464 + 0.25	338,134
Da. Av. Other Oils	7,643 — 8.3	3,975 — 45.2	5,525 + 24.5	798 — 7.6	17,941 — 14.1	16,644
GASOLINE—Gallons						
Stocks, Aug. 17	8,873,000	21,798,000	13,171,000	2,928,000	46,770,000	62,634,000
Prod. 8-17 to 8-24	10,653,000 — 4.8	18,161,000 — 4.9	10,766,000 + 7.0	4,981,000 — 8.1	45,561,000 — 2.7	43,928,000
Ship. 8-17 to 8-24	11,312,000 + 1.9	18,840,000 — 9.9	10,180,000 + 7.2	4,738,000 — 14.3	45,070,000 — 4.2	48,823,000
Stocks, Aug. 24	8,214,000 — 7.4	22,119,000 + 1.5	13,757,000 + 4.4	3,171,000 + 8.3	47,261,000 + 1.0	57,739,000
Ratio Sales to Prod	106.2%	98.3%	94.6%	95.1%	98.9%	111.1%
KEROSENE—Gallons						
Stocks, Aug. 17	8,817,000	2,845,000	1,406,000	246,000	13,314,000	14,526,000
Prod. 8-17 to 8-24	2,661,000 + 18.1	2,719,000 — 7.4	1,517,000 + 8.8	309,000 + 37.3	7,206,000 + 5.8	6,760,000
Ship. 8-17 to 8-24	3,204,000 + 59.7	2,593,000 — 13.4	1,612,000 + 12.1	148,000 — 54.2	7,557,000 + 11.8	7,052,000
Stocks, Aug. 24	8,274,000 — 6.2	2,971,000 + 4.4	1,311,000 — 6.8	407,000 + 65.4	12,963,000 — 2.6	14,234,000
Ratio Sales to Prod	120.4%	95.4%	106.3%	47.9%	104.9%	104.3%
STOVE DISTILLATE—Gallons						
Stocks, Aug. 17	2,097,000	3,199,000	534,000	50,000	5,880,000	5,248,000
Prod. 8-17 to 8-24	90,000 +246.2	292,000 — 36.7	198,000 + 29.4	94,000 + 38.2	674,000 — 4.8	944,000
Ship. 8-17 to 8-24	82,000 + 5.1	304,000 +275.3	20,000 — 89.3	85,000 — 5.6	491,000 + 12.6	862,000
Stocks, Aug. 24	2,105,000 + 0.4	3,187,000 — 0.4	712,000 + 33.3	59,000 + 18.0	6,063,000 + 3.1	5,330,000
Ratio Sales to Prod	91.1%	104.1%	10.1%	90.4%	72.8%	91.3%
GAS OIL—Gallons						
Stocks, Aug. 17	6,609,000	40,117,000	4,026,000	6,589,000	57,341,000	52,837,000
Prod. 8-17 to 8-24	1,874,000 + 15.9	2,135,000 — 0.7	1,522,000 — 0.8	1,639,000 — 32.9	7,170,000 — 7.4	9,964,000
Ship. 8-17 to 8-24	1,991,000 — 12.4	3,954,000 +246.5	1,588,000 — 2.5	2,007,000 — 5.2	9,540,000 + 33.3	7,680,000
Stocks, Aug. 24	6,492,000 — 1.8	38,298,000 — 4.5	3,960,000 — 1.6	6,221,000 — 5.6	54,971,000 — 4.1	55,121,000
Ratio Sales to Prod	106.2%	185.2%	104.3%	122.5%	133.1%	77.1%
FUEL OIL—Gallons						
Stocks, Aug. 17	21,820,000	57,432,000	65,527,000	18,385,000	163,164,000	152,064,000
Prod. 8-17 to 8-24	8,271,000 + 8.9	9,124,000 — 10.6	14,817,000 + 15.9	8,219,000 — 10.9	40,431,000 + 1.6	37,125,000
Ship. 8-17 to 8-24	8,985,000 + 36.3	7,810,000 + 14.7	11,635,000 + 3.6	7,824,000 — 19.2	36,254,000 + 5.7	36,154,000
Stocks, Aug. 24	21,106,000 — 3.3	58,746,000 + 2.3	68,709,000 + 4.6	18,780,000 + 2.1	167,341,000 + 2.6	153,045,000
Ratio Sales to Prod	108.6%	85.6%	78.5%	95.2%	89.7%	97.4%

Gasoline Produced by Various Methods, Week Ended August 24

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	7,269,000	68.2	12,553,000	65.5	8,876,000	82.5	2,503,000	50.3	31,201,000	68.5
Cracked	2,635,000	24.8	5,564,000	29.0	1,693,000	15.7	2,013,000	40.4	11,905,000	26.1
Natural	749,000	7.0	1,044,000	5.5	197,000	1.8	465,000	9.3	2,455,000	5.4
Total	10,653,000		19,161,000		10,766,000		4,981,000		45,561,000	

+ or — columns are % change from previous week.

Gasoline Shipments Fall; Stocks Rise 500,000 Gallons

Staff Special—By Telegraph

TULSA, Aug. 28

SHIPMENTS of gasoline from 82 refineries in the Mid-Continent fell 2,000,000 gallons in the week ended Aug. 24, according to reports gathered by NATIONAL PETROLEUM NEWS. In spite of the decline shipments were in excess of 45,000,000 gallons for the week and 6,000,000 gallons larger than in the corresponding week a year ago.

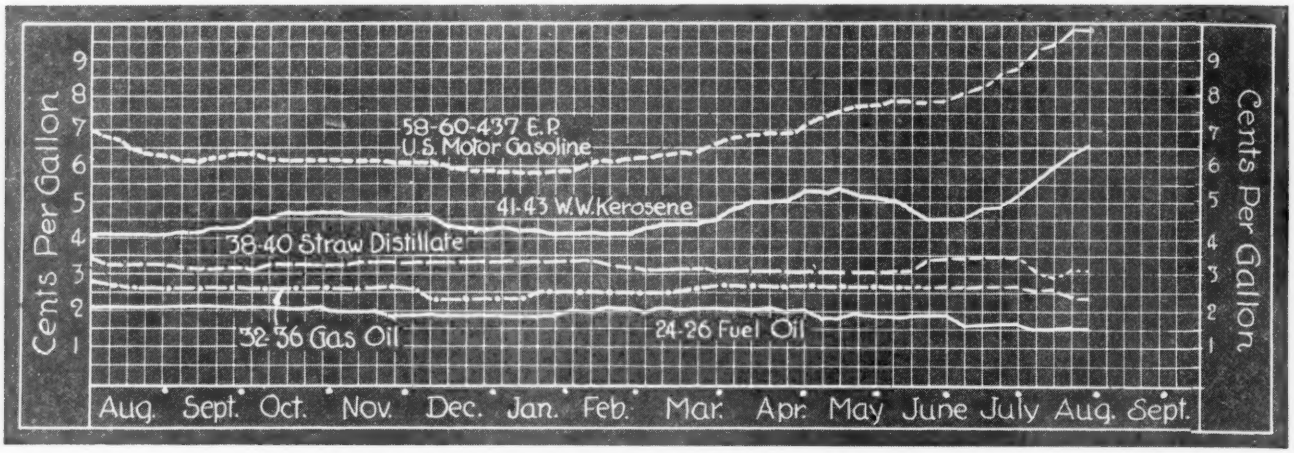
In the last four weeks reporting plants have shipped 190,140,000 gallons of gasoline, an average of 47,500,000 gallons a week. A year ago in the corresponding four weeks virtually the same group of plants shipped 152,551,000 gallons of gasoline, an average of 38,100,000 gallons a week. The increase for the four weeks has been 24.6 per cent as compared with last year. In the

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Aug. 24. Change in stocks figured from July 27.

	Gallons
GASOLINE	
Production	179,662,000
Shipments	190,140,000
Net change in stocks	— 10,478,000
Ratio sales to production	105.8%
KEROSENE	
Production	26,894,000
Shipments	28,165,000
Net change in stocks	— 1,271,000
Ratio sales to production	104.7%
STOVE DISTILLATE	
Production	2,989,000
Shipments	2,256,000
Net change in stocks	+ 733,000
Ratio sales to production	75.5%
GAS OIL	
Production	34,024,000
Shipments	34,174,000
Net change in stocks	— 150,000
Ratio sales to production	100.4%
FUEL OIL	
Production	153,442,000
Shipments	139,136,000
Net change in stocks	+ 14,306,000
Ratio sales to production	90.1%

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P.
U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

earlier months of this year shipments were less than 10 per cent more than they were in the corresponding months of 1927.

In the last week most of the loss in gasoline shipments was reported by Oklahoma. In that state 29 plants shipped 18,840,000 gallons of gasoline as compared with 20,912,000 gallons in the week ended Aug. 17 and 21,671,000 gallons in the record week ended Aug. 3. Only minor fluctuations were observed in other states.

Reporting refiners reduced their production of gasoline to 45,561,000 gallons, a cut of a little more than 1,000,000 gallons. By this action the manufacturers kept the supply of gasoline almost in balance with current demand. The increase in stocks at all plants was less than 500,000 gallons. In the last four weeks this group of plants reduced gasoline stocks 10,478,000 gallons.

The present reserve of 47,261,000 gallons compares with stocks of 69,897,000 gallons by about the same group of plants Aug. 26, 1927, a reduction of 22,636,000 gallons from last year. As mentioned in connection with the last previous weekly report, stocks in the Mid-Continent are down to about one week's supply and are close to an irreducible minimum. Most plants in the field do not have more than a working stock.

Kerosene demand for fall farming needs continued at a high level during the week. Total shipments were 7,557,000 gallons, an increase of 11.8 per cent over last week while production totaled 7,206,000 gallons, an increase of 5.8 per cent. Stocks were cut 351,000 gallons during the week to 12,963,000 gallons. Kansas and Texas refining groups drew on kerosene stocks while small increases were recorded in Oklahoma and north Louisiana and Arkansas. In the past four weeks kerosene stocks have been reduced 1,271,000 gallons in the whole field.

The nearness of fall is bringing about somewhat more interest in stove distillate with a tendency to increase production slightly. This week production totaled only 674,000 gallons, however, a cut of 4.8 per cent from last week. Shipments were 491,000 gallons. Stocks Aug. 24 totaled 6,063,000 gallons as compared with 12,523,000 gallons Aug. 26 last year.

Gas oil stocks were reduced more than 2,000,000 gallons when shipments jumped to 9,540,000 gallons while production was off 600,000 gallons to 7,170,000 gallons. Total stocks Aug. 24 were 54,971,000 gallons.

Fuel oil stocks continued to increase at about the rate which has been noted in recent months. The increase for the week was approximately 4,000,000 gallons bringing reserves to 167,341,000 gallons. Production for the week totaled 40,431,000 gallons and shipments 36,254,000 gallons. Kansas refiners reported a small draft on stocks but other districts all showed increases.

Weighted Average Prices Oklahoma Market

On Feb. 6, 1928, National Petroleum News adopted the policy of publishing weighted average prices on the four more important gasolines in Oklahoma, instead of a range in prices. These weighted averages together with the number of cars of each grade sold, as of Monday, Aug. 27, are published below. The figures are not available for publication in the refinery market table on page 90 of this issue.

	Total Cars	Weighted Average
58-60 U. S. Motor, 437 e. p.	90	9.6861
60-62, 437 e. p.	2	10.0000
60-62, 400 e. p.	3	10.3333
64-66, 375 e. p.		No sales

Note: Above prices are in cents per gallon, f.o.b. Oklahoma refinery in tank car lots.

California Production

(*Continued from Page* 40)

No. 2 which is on production. This well picked up the oil sand nearly 600 feet higher than the lone producer in the new field, indicating a trend to the northwest which may extend into the southeast corner of the Inglewood townlot area. No. 3 well probably will be given a production test early next week, as 11-inch casing is being cemented at 3238 feet with bottom of the hole at 3376 feet.

Associated has also been drilling No. 1 Voorhis, about ⅜ of a mile southeast of the producer, and an oil sand was picked up late in the week at about 4700 feet. This well probably is on the southeast edge of the structure, which is thought to run more than a mile at least to the northwest.

Long Beach again shows a decline, in the face of the completion of 17 new producers, making slightly less than 660 barrels flush to the well.

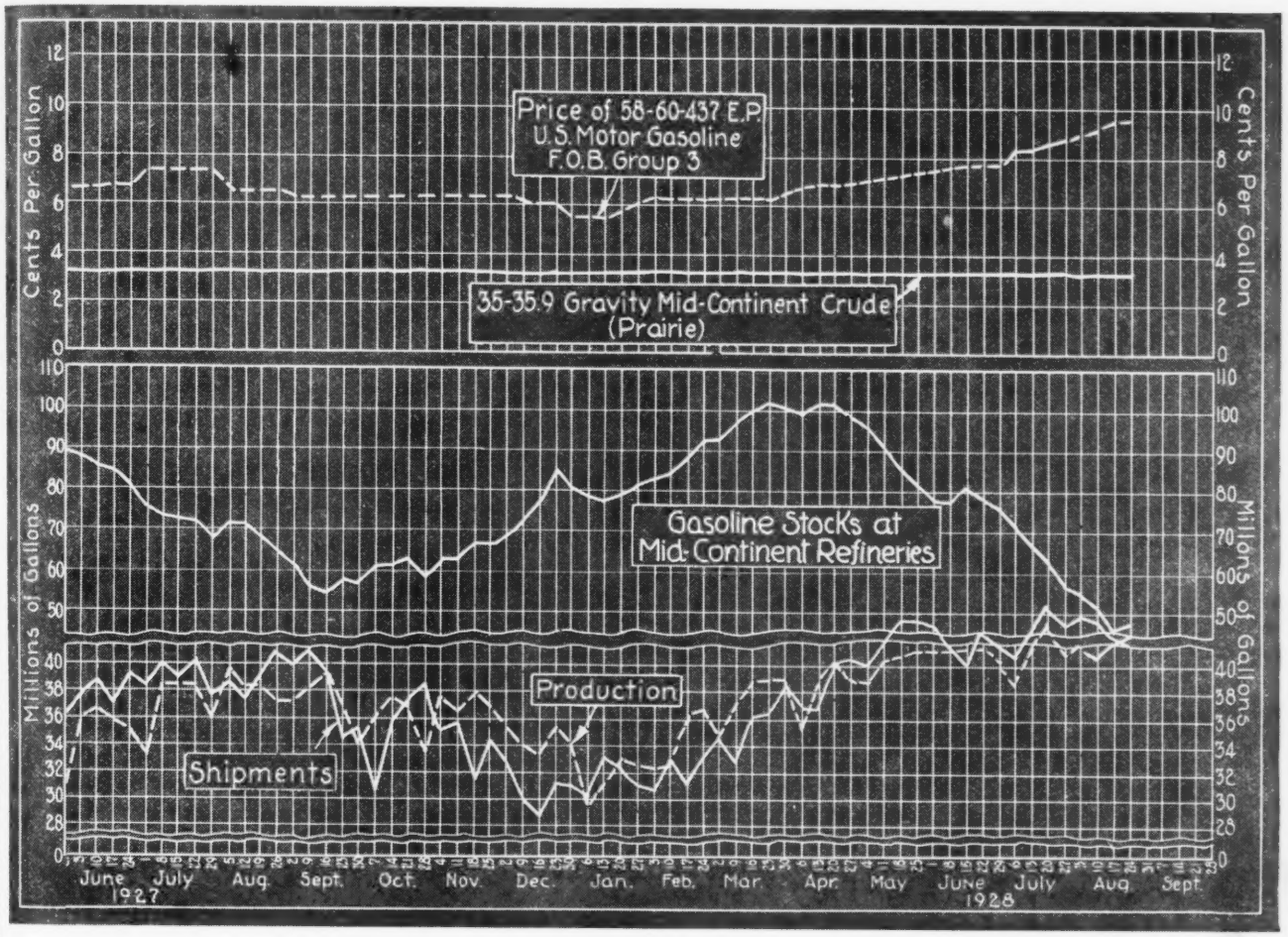
Around 175 wells are still drilling or being deepened at Long Beach, but it is indicated the head is off the field and that new wells from now on will furnish small initial production. Most of the larger companies are securing acreage along the coast, especially west of the Rio Grande-Barnsdall tract, paying in some instances as high as $2000 bonus per acre.

In Ventura Avenue, 45 wells are actively drilling, many of which are below 5000 feet.

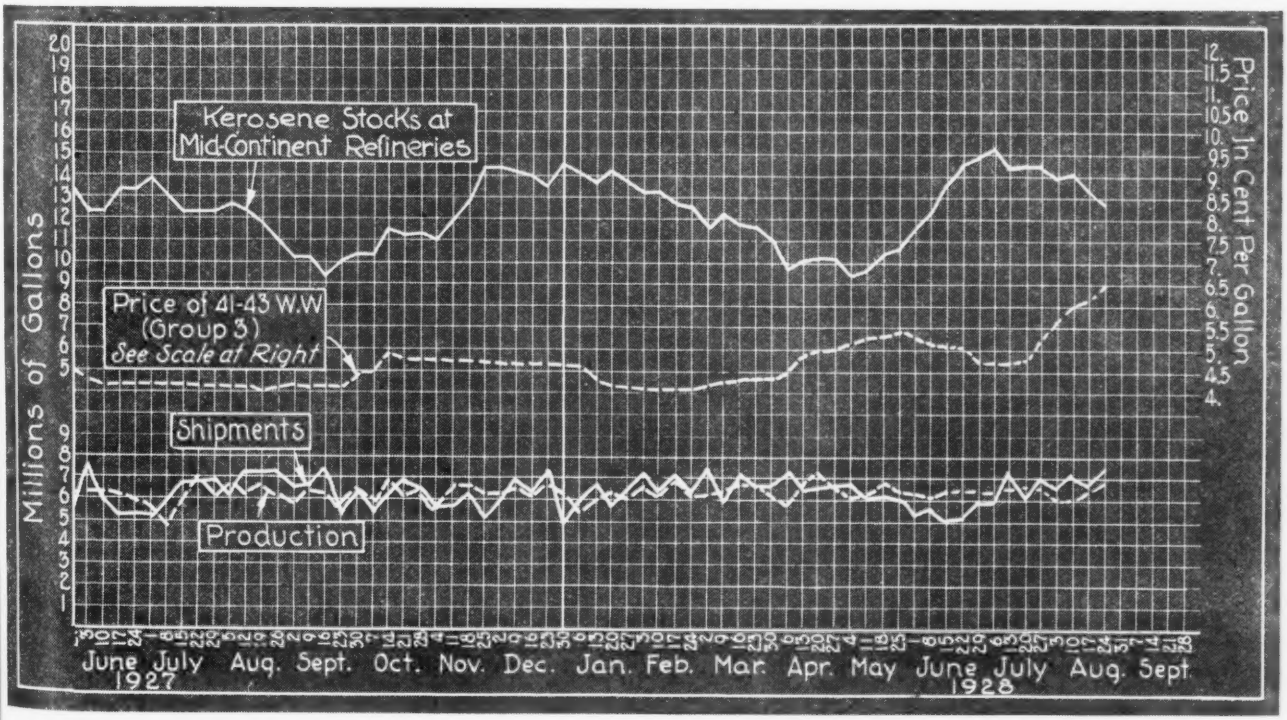
The Associated's Lloyd No. 100, for several days the deepest producer in the world, has been killed and a water witch is being run to discover the point where water is entering the hole. This job had not been completed at end of the week. This well has a total depth of 7959 feet. When the oil string was run in, it froze more than 1000 feet off bottom and it is doubted if the last 1000 feet, which cores indicated to be oil sand, ever produced any oil, as it is thought that the drilling mud practically plugged off the bottom.

Barometer of Mid-Continent Refinery Market—Week Ending August 24

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 82 Plants to National Petroleum News

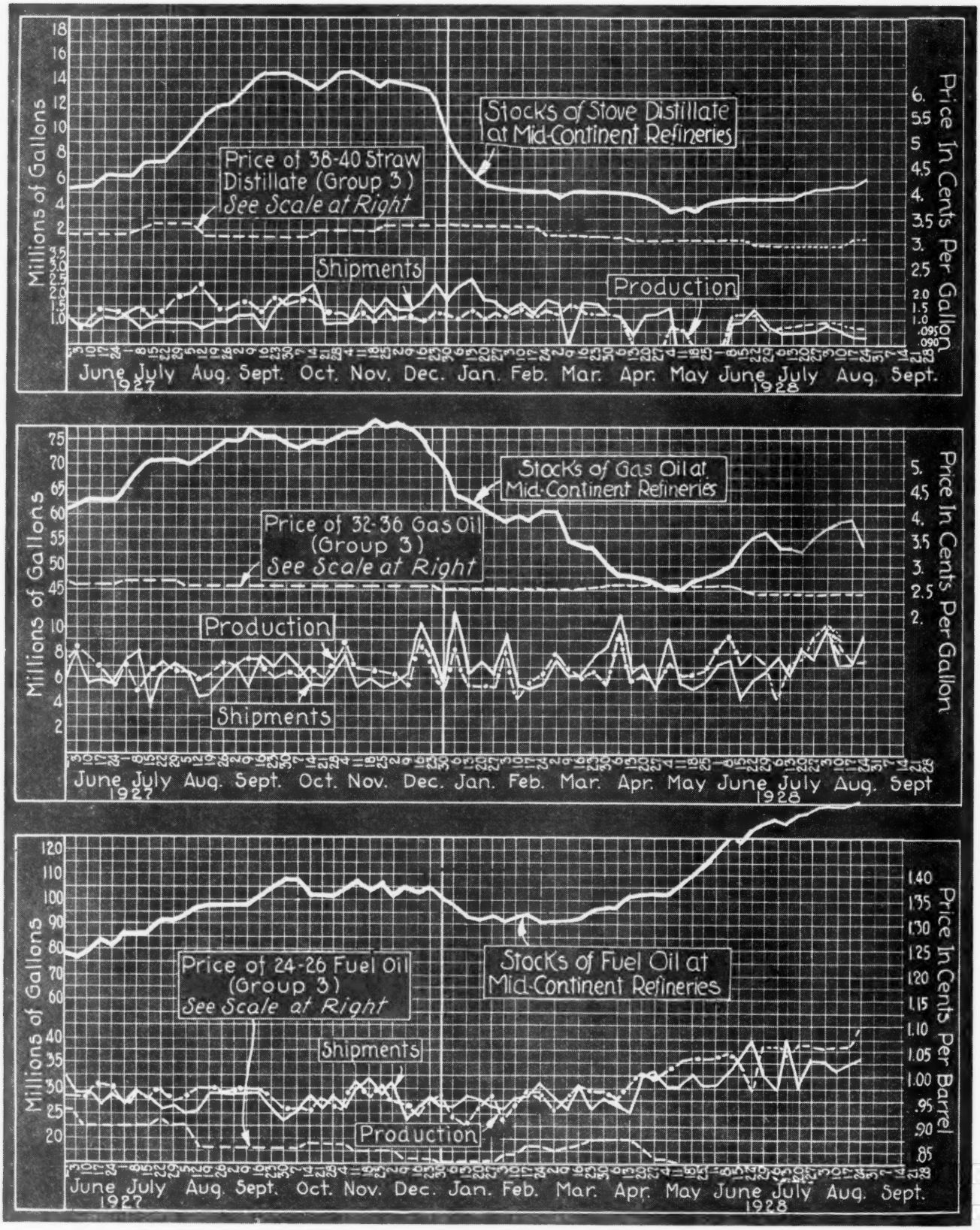

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at Mid-Continent Refineries
Production
Shipments
Millions of Gallons
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on the opposite page


Kerosene Stocks at Mid-Continent Refineries
Price of 41-43 W.W (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cent Per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

Barometer of Mid-Continent Refinery Market—Week Ending August 24

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 82 Plants to National Petroleum News


Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept
1927
1928
Millions of Gallons
Price In Cents Per Barrel
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Stocks of Fuel Oil at Mid-Continent Refineries
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

Penna. U.S. Motor 12 Cents; Wax Up to 5 Cents

CLEVELAND, Aug. 25.—U. S. Motor gasoline quotations advanced to 12 cents this week in western Pennsylvania spot market. Some sellers, refiners and brokers, were quoting 10.75 cents early in the week. Quotations under 12 cents were off the market by end of the week and some refiners were asking 12.25 cents.

September gasoline quotations have been few. One refiner was offering goods at 12 cents over the month. Another refiner was asking 12 cents on a limited quantity over first part of September. Most sellers were not quoting as yet.

Higher gravity gasoline quotations were advanced this week. A scarcity of these grades was reported.

Kerosene quotations also were up. Range on 45 w.w. was unchanged at 6.75 to 7 cents, but many refiners advanced their quotations to the higher figure. A broker was in market for 200 cars of kerosene for September delivery. Some goods were bought at 6.75 cents this week.

Wax was up 0.25 cent to 5 cents. Some New York buyers were offering 4.875 and 4.75 cents for goods but many refiners reported turning down these offers.

Bright stock spot prices were unchanged at 36 to 36.50 cents for light and 34 to 34.50 cents for dark. One refiner and one broker were quoting 37 cents and 34 cents, respectively, for September bright stock.

Cylinder stock quotations were unchanged over the week. Fuel oil and viscous neutrals were not in great demand with quotations generally unchanged.

Natural Gasoline Association Opens Office

LOS ANGELES, Aug. 25.—The California Natural Gasoline Association has opened office at 221 Higgins building 108 West Second street, Los Angeles, with Mrs. E. C. Moe, assistant secretary, in charge. H. W. Parmalee is secretary, but since he gives his time to the Lovell Gasoline Co., it is impossible for him to spend much time in the office of the association.

George Ratcliffe, president, has charge of natural gasoline operations for the General Petroleum Corp., but has an office in the Higgins building, as has Mr. Parmalee.

LOS ANGELES, Aug. 25.—Dan W. Henke, assistant treasurer of Guiberson Corp., Dallas, Texas, is spending some time in the Los Angeles office of the company and is making a survey of the California oil industry.

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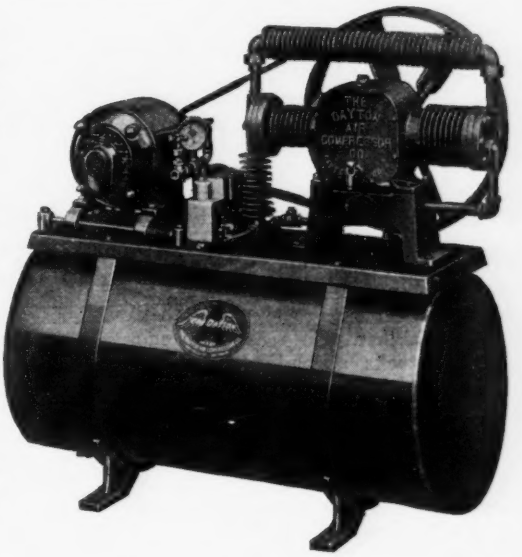

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National Petroleum News, 1213 W. Third St., Cleveland, Ohio

Foreigners Fail to Buy At New High Prices

Staff Special
NEW YORK, Aug. 25

GULF export markets were featureless the past week. Except for a further stiffening in kerosene, the general market lacked a movement of importance in any direction.

The trade was somewhat disappointed in the failure of foreign buyers to respond to the new high prices established this week for both gasoline and kerosene. The foregoing came about with the closing of an intercompany transaction. By virtue of its being an intercompany transaction one or two observers believed the prices could not be taken as a true index of the market. They were, therefore, not surprised when it failed to develop any interest from the other side.

On the other hand, several suppliers were of the opinion that after two to three weeks of staying out of the market, foreign companies were about due to come in for their October-November requirements and that they would take higher prices as their cue to cover. Stocks abroad are said to be somewhat larger now with this month's heavy receipts—probably sufficient to last through September—and loadings scheduled at the Gulf for September also are large. At the same time, there has not as yet been the normal volume of buying for October-November consumption.

One large broker early this week said he had four exclusive inquiries for gasoline for Aug.-Sept. loading. In each instance the buyer quickly withdrew from the market when confronted with the prices suppliers now ask, believing them high. One buyer, seeking a cargo of approximately 65,000 barrels of gasoline, withdrew and purchased between 8,000 and 10,000 barrels from Rumania, the broker said.

Most suppliers were asking 10 to 10.25 cents for U. S. Motor. Several last week indicated as high as 12.50 cents for 64-66, 375 end point gasoline and one or two offered this grade firm at 12 cents, whereas 12.25 cents flat was the asking price this week.

The French subsidiary of a leading Independent refiner Monday purchased approximately 75,000 barrels of 64-66, 375-end point gasoline, water white and prime white kerosene for Sept. 15-Oct. 15 loading. More than half of the total quantity was kerosene. The prices paid were 12.25 cents, 7.75 cents and 6.625 cents, respectively.

The parent company closed the deal and reported the high kerosene prices came as the result of extreme scarcity of goods available for fairly prompt loading. Shipments of kerosene on contracts and previous sales have been extremely heavy from the Gulf the last few weeks. Water white was reported available in much smaller volume than prime white, although several companies advanced their prices for both grades.

A part cargo of approximately 34,000 barrels of prime white kerosene sold early in the week at 6.375 cents. The broker who negotiated the deal said the closing was on a firm offer made last week, however, and he doubted seriously if this price could have been duplicated. Friday and Saturday the majority of suppliers were asking from 6.50 to 6.625 cents for prime white and two indicated they would have to get 6.75 cents.

The market was devoid of inquiries until late in the week when the French subsidiary of a Philadelphia refiner entered for a small cargo of gasoline and kerosene. Bids were first sought for north Atlantic loading early in September but the buyer later asked for Gulf loading later in the month. The inquiry calls for approximately 33,000 barrels of U. S. Motor and 64-66, 375-end point gasoline and prime white kerosene, with about twice as much of the 64-66 as the other two grades together.

There was a better foreign demand for gas oil this week and at least two cargoes were reported sold. One cargo of 28 plus uncracked gas oil sold at 3.95 cents a gallon and a cargo of 30-32 gravity goods sold at 4 cents. Both cargoes are for early September loading.

Fuel oil was quiet with prices for bunkers and cargoes of Grade C generally unchanged over last week.

Small Supply of Kerosene Causes Higher Prices

Staff Special
NEW YORK, Aug. 25

KEROSENE pushed forward in eastern markets this week. Advances of 0.5 to 0.75-cent in tank car prices at all terminals along the Atlantic coast were the feature of the market with gasoline temporarily taking second place from the standpoint of interest.

It was quite generally agreed among the trade that it was scarcity of goods rather than any unusual demand that gave rise to the upward trend in kerosene prices. There has been a steady call from jobbers for small lots of this commodity causing reduction of refiners' stocks.

The entrance of several large refiners into the market as buyers offered further cause for the general belief that kerosene was in a strategic position from the standpoint of supplies, especially with fall demand close at hand.

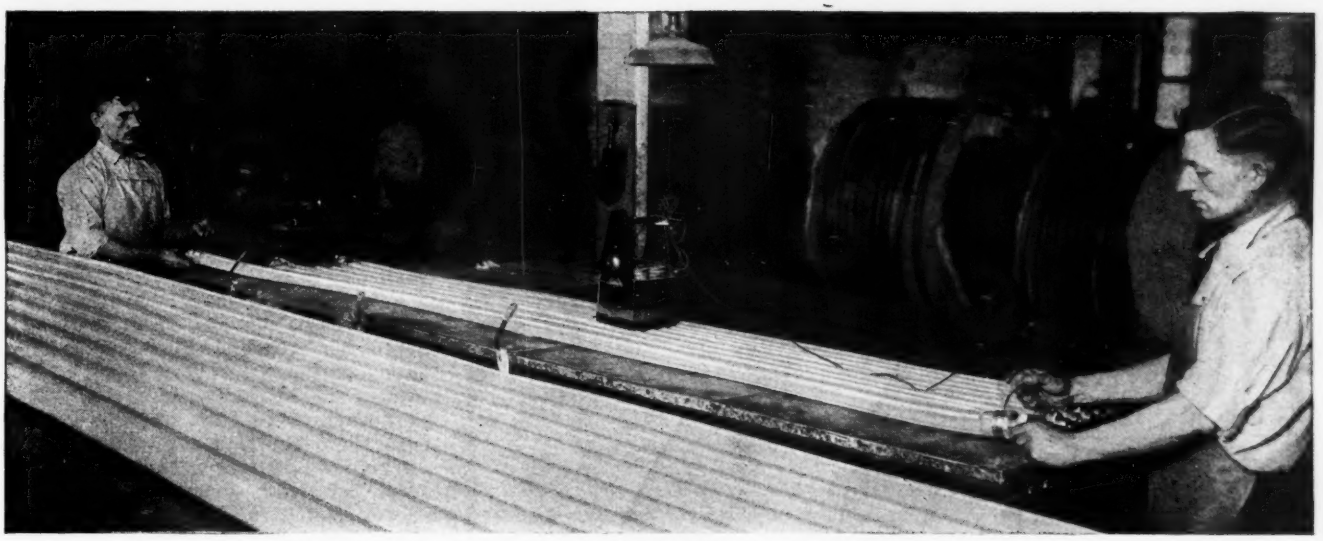
A large New York harbor refiner was reported seeking approximately 200 cars of water white kerosene in the Pennsylvania market for shipment over September. What success he had in obtaining his requirements could not be ascertained but it was learned from reliable sources that there was little, if any, goods available below the levels to which prices advanced in that district last week.

The rising market started with Standard Oil Co. of New Jersey and Atlantic Refining Co. advancing their quotations for water white goods to 8.50 cents on Thursday. For the former it was a 0.75-cent raise and for the latter a 0.5-cent. All other major refiners either met the advance immediately or withdrew from the market. At least two said they had little or none to offer and any prices they might quote obviously would be arbitrary. In but one market, namely Baltimore, was water white kerosene available at less than 8.50 cents at the close of the week. One large refiner there was said to have considerable goods in storage. He maintained his former price of 8 cents.

Conflicting opinions were voiced among the trade regarding the gasoline situation, but the week closed with prices remaining at last week's levels. Distress offerings from resale agents at a shade under the prices quoted by major sellers were sufficient to meet the light demand for spot shipment. Little spot business was done on the basis of 1.75 cents, the price asked by major refiners.

Several jobbers who were unable to take out their full contract commitments also were offering U. S. Motor at 0.125-cent over their purchase price. In some instances they were even willing to break even at 11.25 cents, the price most of them paid for gasoline over the last half of August.

There were those on the other side of the market who viewed the advance in tank wagon gasoline by Standard Oil of Ohio on Saturday as a bullish factor, although they admitted the effect of the advance on seaboard prices would be rather re-



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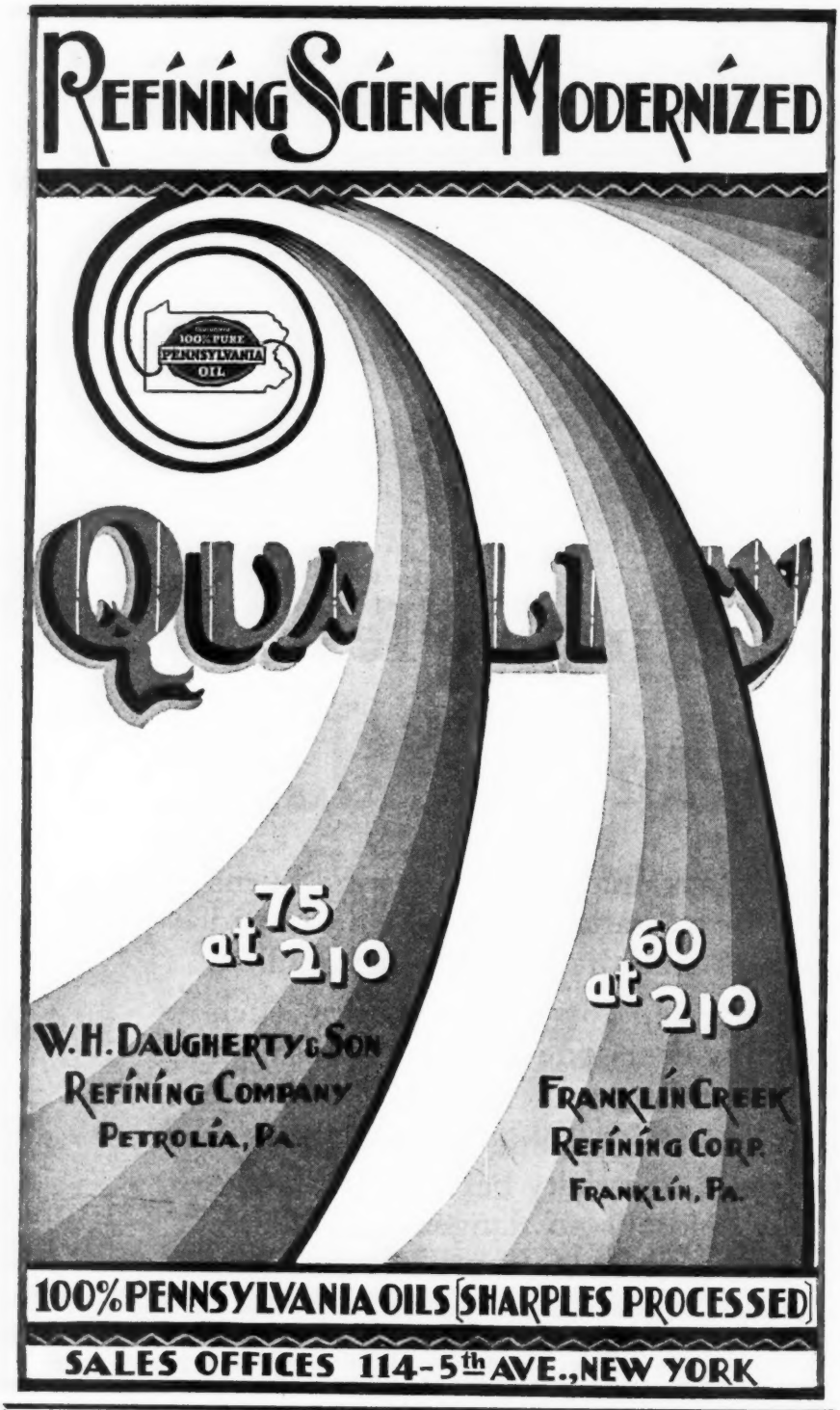
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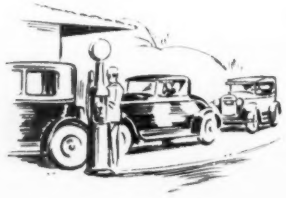

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mote. Two large Independent distributors in greater New York, however, advanced their tank wagon and service station prices 1 cent early in the week. Their station prices still are 2 cents below those posted by Standard of New York and other large companies, but the move was considered one which would improve materially a retail market which has been in a none too healthy state all summer.

Few companies have shown any inclination to commit themselves on September gasoline as yet. Several asserted they could sell all they wanted to at 11.75 cents. Jobbers, they said, were that anxious to secure their September requirements.

There was a larger call for gas oil from industrial users this week and spot demand for bunker oil was a shade more active. Prices for these commodities, however, were generally unchanged.

Wax Prices Higher; Buyers Bidding for Supply

NEW YORK, Aug. 25.—Wax markets continued active from an inquiry standpoint the past week. Prices for fully refined grades were practically stationary but white and yellow crude scale were up 0.125 to 0.25-cent. Buyers were bidding freely for goods but had little success in obtaining their requirements at prices in line with their ideas.

One large refiner asserted he had refused orders for white crude scale at 5 cents. Some goods sold at this price early in the week but offerings were limited and quickly taken up.

Confirmation of the foregoing was seen in the report of a broker who late in the week was bidding 5.05 cents for 200 tons of white scale. His order specifies 50 tons a month from September to December, and he said he was encountering considerable difficulty in getting even so much as a nibble at his offer. Without a doubt the 50 tons for September would be comparatively easy to pick up at the price, he said, but he was not sure of the balance.

White crude scale also sold at 5 cents a pound at the Gulf. Offerings in this section were said to be equally as scarce as at New York. Fully refineds were steady and prices about on a level with those at New York.

LOS ANGELES, Aug. 25.—R. J. Hutchins, connected with Buck & Stoddard, Pacific coast distributors for many lines of oil well equipment and supplies, recently returned from a journey of several weeks through California and Canada.

LOS ANGELES, Aug. 25.—D. B. Brown, representative of Guiberson Corp., from Midland, Texas, left Los Angeles recently after a visit of several weeks in California.

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations and sales.)

	Aug. 27	Aug. 20	Aug. 13
U.S. Motor gasoline, New York harbor	11.75	11.75	11.75
U.S. Motor gasoline, Philadelphia	11.50 -12.00	11.50 -12.00	11.50 -11.75
U.S. Motor gasoline, Portland	†12.75	.....	.....
U.S. Motor gasoline, Boston district	*12.25	*12.25	*12.25
U.S. Motor gasoline, Providence district	*12.25	*12.25	*12.25
U.S. Motor gasoline, Baltimore	11.75	11.75	11.75
U.S. Motor gasoline, Norfolk	11.75	11.75	11.75
U.S. Motor gasoline, Charleston	11.50	11.50	11.50
U.S. Motor gasoline, Savannah	11.25	11.25	11.25
U.S. Motor gasoline, Jacksonville	11.25	11.25	11.25
California U.S. Motor gasoline, New York Harbor	12.00	12.00	11.75 -12.00
California U.S. Motor gasoline, Baltimore	11.75	11.75	11.75
California U.S. Motor gasoline, Philadelphia	11.50 -11.75	11.50 -11.75	11.50 -11.75
Water white kerosene, New York Harbor	8.00	7.75 - 8.00	7.75 - 8.00
Water white kerosene, Philadelphia	8.00	7.75 - 8.00	7.75 - 8.00
Water white kerosene, Baltimore	8.00 - 8.50	7.75 - 8.00	7.75 - 8.00
28-34 gas oil, New York harbor	4.75 - 5.00	4.75 - 5.00	5.00
28-34 gas oil, Boston district	4.75 - 5.00	4.75	4.75
36-40 furnace oil, New York harbor	6.00	6.00	6.00
36-40 furnace oil, Boston district	6.00 - 6.25	6.00 - 6.25	6.00 - 6.25
Grade C bunker oil, New York harbor	$1.05	$1.05	$1.05
Grade C bunker oil, Boston district	$1.05 -$1.10	$1.05 -$1.10	$1.05 -$1.10
Diesel oil, New York harbor	$2.00	$2.00	$2.00

Note: Above prices do not include inspection tax levied in some states.
*Minimum of 13.50c delivered.
†Minimum of 14c delivered

MEDICINAL OILS

Russian 885-890 s.g. 325-330 vis	$0.80 - 0.90	$0.80 - 0.90	$0.80 - 0.90
Russian 870-875 s.g., 150-155 vis	$0.67 - 0.77	$0.67 - 0.77	$0.67 - 0.77
Russian 860-865 s.g., 80-85 vis	$0.65 - 0.75	$0.65 - 0.75	$0.65 -$0.75

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)

	Aug. 27	Aug. 20	Aug. 13
U. S. Motor gasoline	26.90	26.90	26.90
43-45 150 w.w. kerosene	18.65	18.65	18.40
42-44 110 s.w. kerosene	17.40	17.40	17.40

CYLINDER OILS

Bright stock, dark	41.00 -42.00	40.00 -42.00	40.00 -42.00
600 D filtered	30.00 -32.00	30.00 -32.00	30.00 -32.00
600 Warren E filtered	26.00	25.50	25.50
600 s.r. unfiltered	20.00 -21.00	20.00 -21.00	20.00 -21.00
650 s.r. unfiltered	22.50 -23.00	22.50 -23.00	22.50 -23.00
600 flash, s.r.	25.00 -26.00	25.00 -26.00	25.00 -26.00
630 flash, s.r.	34.00 -36.00	34.00 -36.00	34.00 -36.00

RED ENGINE OILS (Vis. 100°)

300 vis. No. 6½ color	19.50	19.50	19.50
250 vis. No. 6 color	18.50	18.50	18.50
200 vis. No. 6 color	18.00	18.00	18.00

PALE ENGINE OILS (Vis. 100°)

230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.50	19.50	19.50
100 vis. No. 2¼ color	15.50	15.50	15.50

MOTOR OILS (Vis. 100°)

600 vis. No. 7 color	34.50	34.50	34.50
500 vis. No. 6½ color	32.50	32.50	32.50
400 vis. No. 7¼ color	30.50	30.50	30.50
300 vis. No. 6 color	29.50	29.50	29.50
200 vis. No. 3¼ color	20.00	20.00	20.00

MEDICINAL OILS

875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)
WHITE CRUDE SCALE (In barrels)

	Aug. 27	Aug. 20	Aug. 13
122-124 A.m.p.	5.00	4.75 - 5.00	4.625- 4.75
124-126 A.m.p.	5.00	4.75 - 5.00	4.625- 4.75

FULLY REFINED (In burlap bags)

123-125 A.m.p. Phila.	5.375- 5.50	5.375- 5.50	5.25 - 5.375
125-127 A.m.p.	5.50 - 5.625	5.50 - 5.625	5.25 - 5.375
128-130 A.m.p.	5.625- 5.75	5.625- 5.75	5.50 - 5.625
130-132 A.m.p.	6.00	6.00 *	5.75 - 6.00
133-135 A.m.p.	7.00	6.875- 7.00	6.75 - 7.00
135-137 A.m.p.	7.25 - 7.375	7.25	7.25

YELLOW CRUDE SCALE

124-126 A.m.p.	4.875-5.00	4.50 - 4.625	4.375- 4.50

***Prices nominal.**

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary)

GASOLINE	Aug. 27	Aug. 20	Aug. 13
U. S. Motor	*10.25	10.00 -10.25	10.50
60-62, 400 e.p.	11.00	11.00	11.00
61-63, 390 e.p.	11.50 -11.75	11 50 -11.75	11.75
64-66, 375 e.p.	*12.25	12.00 -12.25	12.00 -12.50
U. S. Motor, cases (cargoes)	$1.95	$1.95	$1.95
64-66, cases (cargoes)	$2.10	$2.10	$2.10

***Sales only.**

KEROSENE

44 water white	7.75	7.50	7.25 - 7.50
41-43 prime white	*6.625	6.375- 6.50	6.25 - 6.50
Water white, cases (cargoes)	$1.65	$1.65	$1.65
Prime white, cases (cargoes)	$1.55	$1.55	$1.55

***Sales only.**

DOMESTIC GAS & BUNKER OILS

*26-30 translucent gas oil	3.875- 4.00	3.875- 4.00	3.875- 4.00
*30-32 translucent gas oil	4.00	4.00	4.00
Grade C bunker oil	$0.80 -$0.90	$0.80 -$0.90	$0.85 -$0.95
Grade C bunker oil, cargoes	$0.65 -$0.70	$0.65 -$0.70	$0.70

***Less than ½ of 1% sulfur.**

MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)

Heavy Panuco crude taxes to be paid	$1.00 -$1.02	$1.00 -$1.02	$1.00 -$1.02
Grade C bunker oil, for bunkering purposes, taxes paid	$1.10	$1.10	$1.10

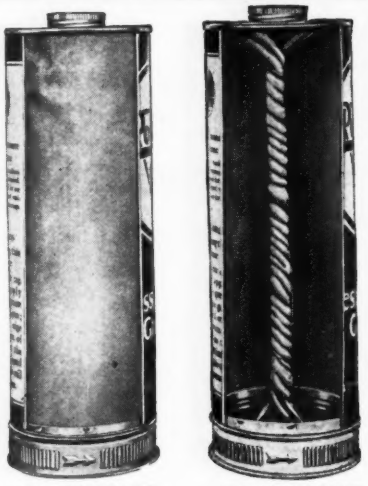
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F.: cold test 0) (Tanker, f.o.b.Houston)

100 vis. No. 2 unfiltered pale	5.75	5.75	5.75
200 vis. No. 3 unfiltered pale	8.50 - 9.00	8.50 - 9.00	8.50 - 9.00
300 vis. No. 3 unfiltered pale	9.50 - 9.875	9.50 - 9.875	9.50 - 9.875
500 vis. No. 3½ unfiltered pale	10.75 -11.50	11.00 -12.00	11.00 -12.00
750 vis. No. 4 unfiltered pale	12.50 -13.00	12.50 -13.00	12.50 -13.00
1200 vis. No. 5 unfiltered pale	15.50 -16.00	15.50 -16.00	15.50 -16.00
200 vis. No. 5-6 red oil	7.00 - 8.00	7.00 - 8.00	7.00 - 8.00
300 vis. No. 5-6 red oil	8.00 - 9.00	8.00 - 9.00	8.00 - 9.00
500 vis. No. 5-6 red oil	9.75 -10.50	10.00 -10.50	10.00 -10.50
750 vis. No. 5-6 red oil	11.25 -11.50	11.25 -11.50	11.25 -11.50
1200 vis. No. 5-6 red oil	14.50 -16.50	14.50 -16.50	14.50 -16.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Aug. 27	Aug. 20	Aug. 13
Gasoline, U. S. Motor, 53-55 Gravity	8.50 - 9.00	8.50 - 9.00	8.50 - 9.00
Gasoline, U. S. Motor, blends and special cuts	9.00 - 9.50	9.00 - 9.50	9.00 - 9.50
Gas Oil, 30-34, per barrel	$1.10 -$1.20	$1.10 -$1.20	$1.10 -$1.20
Diesel Oil, 27 plus, per barrel	$0.95 -$1.10	$0.95 -$1.10	$0.95 -$1.10
Bunker oil, 14-18, per barrel	$0.80 -$1.00	$0.80 -$1.00	$0.80 -$1.00
Fuel oil, 14-18 per barrel	$0.70 -$1.00	$0.70 -$1.00	$0.70 -$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.50 - 6.00	4.50 - 5.00	4.50 - 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 -$1.85	$1.75 -$1.85	$1.75 -$1.85
Kerosene, 38-40 w. w., 125-150 flash	$1.50 -$1.60	$1.45 -$1.50	$1.45 -$1.50



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Spot Demand for Gasoline Slackens in Chicago

Staff Special
CHICAGO, Aug. 25

RUMORS of various kinds filled the air as the Chicago oil men closed their desks for the conventional week-end rest. While no official announcement has been made by any company, it is known that the Quantity Discount Agreement is to be practically done away with within a month and there is much speculation as to the effect of this action on the wholesale market.

The one-cent per gallon advance in gasoline prices by the Standard Oil Co. of Ohio also came in for considerable discussion, and opinion was divided as to whether this would help the local market.

Spot gasoline demand slackened considerably during the week and prices of U. S. Motor were approximately 0.125 cent lower as the week closed. On the other hand, most refiners reported their contract customers ordering out all the gasoline possible and, therefore, a number of them were still not offering much gasoline on the spot market. Some refiners were offering U. S. Motor gasoline over September but the majority refused to commit themselves on that basis.

The bulk of sales of U. S. Motor were at 9.75 to 9.875 cents until August 24, when a considerable quantity of goods moved at 9.625 cents. Most sales were at 9.625 to 9.75 cents August 25, with some sellers still getting 9.875 cents. Resale agents reported U. S. Motor freely offered at 9.50 cents and in a few cases at 9.375 cents, as against 9.625 and 9.75 cents a week ago.

High test gasolines sold at generally unchanged prices over the week. Goods were more freely offered for spot shipment than for some time past. Demand from both domestic and export buyers was light. The 60-62, 437 e.p. grade sold at 9.875 to 10.125 cents August 25, after moving at 10 to 10.125 cents previously.

Gasoline of 60-62, 400 e.p. opened August 20 at 10.375 to 10.50 cents and moved at 10.25 to 10.50 cents thereafter. The 64-66, 375 e.p. gasoline moved mostly at 11 cents all week, with sales reported ranging between 10.875 and 11.25 cents.

Kerosene was the most active commodity in the Chicago market during the week. The threshing season continues in full swing in most of Standard of Indiana territory and fall plowing has started in some places. This brought about a very good seasonal demand for this product, and several refiners reported being behind on shipments. Prices advanced steadily over the week with 41-43 w.w. grade opening at 6.125 to 6.25 cents and closing August 25 at 6.375 to 6.50 cents. Several sellers reported moving considerable quantities of Toledo kerosene into this territory at 6.25 cents, Group 3 freight basis.

Distillate was in steady demand in the Chicago market this week, although prices were on a level with those prevailing at the close of the previous week. Jobbers were apparently buying to fill their storage in anticipation of fall demand. Most sales of 38-40 straw distillate were at 3.125 to 3.25 cents all week, although some sales were reported as high as 3.50 cents.

Gas and fuel oils were generally unchanged in price over the week, with demand reported fair in most quarters. Several sellers said they had closed a considerable number of contracts with industrial concerns for their September fuel requirements at prices close to quotations for spot shipment.

Ordinary 32-36 dark gas oil opened August 20 at 2.375 to 2.625 cents and moved at 2.50 to 2.625 cents for the remainder of the week. The 32-36 dark zero grade moved mostly at 2.625 to 2.75 cents, while 2.75 to 3 cents was the prevailing price on 32-36 straw zero goods.

Prevailing prices for fuel oils during the week were: 28-30, $0.80 to $0.85; 24-26, $0.65 to $0.675; 22-26, $0.625 to $0.65 and 18-22 at $0.55 to $0.625. High sulfur 18-22 fuels moved mostly at $0.55 to $0.575 and the low sulfur grades at $0.575 to $0.625. Smackover treated fuel quotations were arbitrary at $0.825.

Unsettled, showery weather is the official forecast of Chicago bureau for Standard of Indiana territory the first half of next week; followed by generally fair weather in the latter half in most sections. Temperatures near normal first half week; followed by rising temperatures the latter part.

Jobber Heads to Meet in Chicago

LINCOLN, Neb., Aug. 24.—Among those who attended the State Executives club meeting in Chicago Aug. 23 was S. A. Wassum, president of the Tekamah Oil Co., Tekamah, and president of the Nebraska Independent Oil Men's Association. C. M. Sutherland, secretary of that association, will also attend the meeting.

OIL STOCKS AND FINANCES

National Petroleum News

Six of 19 Companies Report Improvement in Earnings

CLEVELAND, Aug. 27

EARNINGS statements of 19 more oil and gas companies for the first half of 1928 show improvement over earnings in the first half of 1927 for six and smaller returns for 13. The companies who showed increased profits are the Atlantic Refining Co., Houston Gulf Gas Co., Louisiana Oil Refining Corp., and Richfield Oil Co. Panhandle Producing & Refining Co. and Simms Petroleum Co. reported smaller losses on operations.

Summary of operation results for the two half-year periods follows:

First Half	1928	1927
Amerada Corp.	$1,057,907	$2,090,429
Atlantic Refg.	5,689,987	*1,477,419
Beacon Oil	†141,467	†240,028
General Asphalt	*339,241	305,015
Houston Gulf Gas	††1,382,400	††1,126,784
Louisiana Oil Refg.	†588,058	261,563
Mid-Continent Petrol.	††3,248,666	††4,884,955
Pan American Western	*61,992	163,814
Phillips Petroleum	‡6,519,977	‡11,628,873
Pennok Oil	6,091	43,099
Panhandle P. & R.	*64,155	*280,083
Richfield Oil	3,210,683	†1,483,547
Shell Union Oil	†6,043,236	†7,589,417
Simms Petroleum	*209,842	*211,608
Sinclair Consolidated	††9,452,955	††13,539,049
Skelly Oil	456,344	821,597
Superior Oil	*501,045	241,637
Texas Pacific	‡717,150	‡1,346,872
H. F. Wilcox Oil	38,184	††1,110,562

*Loss. †Before income tax. ‡Before depletion and depreciation.

Statements of eight of 13 companies whose reports for the second quarter of 1928 are available, show improvement over the second quarter of 1927. The eight are the Atlantic Refining Co., Beacon Oil Co., Louisiana Oil Refining Corp., Mid-Continent Petroleum Corp., Richfield Oil Co., Shell Union Oil Co., and Skelly Oil Co., which show larger net income, and the Panhandle Producing & Refining Co., which reports a smaller loss.

Summary of the operating results of the 13 companies for the two second quarters follows:

Second Quarter	1928	1927
Amerada Corp.	$498,014	$924,754
Atlantic Refg.	4,332,630	1,357,357
Beacon Oil	†550,387	181,886
Louisiana Oil Refg.	†426,904	33,332
Mid-Continent Petrol.	††2,216,275	††2,004,105
Phillips Petroleum	‡3,414,886	‡4,824,154
Panhandle P. & R.	*51,623	*139,270
Richfield Oil	1,820,165	745,532
Shell Union Oil	†4,492,069	†2,306,162
Simms Petroleum	*41,832	75,389
Skelly Oil	387,258	254,336
Superior Oil	*226,631	*82,745
Texas Pacific	‡323,070	‡652,936

*Loss. †Before income tax. ‡Before depletion and depreciation.

The Atlantic Refining Co. makes the best report of any company to date for the first half of 1928. However, J. W. Van Dyke, chairman, offers stockholders a grain of salt with this report.

"It is pertinent to point out," he wrote, "that, following our custom, merchandise inventories carried over from 1927 into the current period have not been written up as to value and that, therefore, the showing for this latter period has not been unduly favored.

"The experiences in the corresponding periods of 1925 and 1926 have been cited as more reasonable for comparison with the present. (In the first half of 1925 the company netted $4,225,810 and of 1926 $3,248,113). Such a comparison made in some detail, reveals that the margin between the cost of crude oil consumed for manufacturing purposes and the prices realized for products sold was almost identical in 1928 with the averages for the years 1925 and 1926; therefore marketing conditions per se were not responsible for the increased earnings enjoyed.

"A further comparison reveals, however, a marked decrease in manufacturing expenses, which, expressed in figures, is equivalent to about 56 per cent of the improvement. This is very gratifying to your management as a vindication of their previous actions in making large investments for plant expansions and improvements.

"The remaining 44 per cent of the increased earnings is substantially traceable to the fortunate experience of your subsidiary company, the Atlantic Oil Producing Co., in the Seminole area of Oklahoma and in Crane and Winkler counties, Texas. This showing is particularly gratifying, since it covers a period when to the best of our information the crude oil producing industry generally has been realizing insufficient returns."

Mr. Van Dyke predicted earnings by early 1929 from the company's 500-mile pipe line from west Texas to its tide water terminal on the Neches river near Port Arthur. This line will have a capacity of about 40,000 barrels a day.

The Beacon Oil Co. came out of the red in the second quarter, netting before federal taxes $550,387. In the first quarter of this year it lost $408,920.

The Richfield Oil Co. produced in the half year 5,401,000 barrels of crude oil and casinghead gasoline, compared with 3,227,000 barrels the first half of 1927 and 3,213,000 barrels the second half. President James A. Talbot reported to stockholders the company was strengthening its reserves with proven and prospective acreage and that the company expected to maintain and increase its present production. Sales were further increased during the half year, he wrote.

Richfield has just listed $4,375,000 additional $25 capital stock on the New York Exchange. This stock is that which is being exchanged for Pan American Western Petroleum Co. control.

Improved prices for gasoline aided Simms Petroleum Co., Chairman Thomas W. Stretter and President Edward T. Moore reported. The company also is receiving 5 cents a barrel more for its west Texas crude oil and 10 cents a barrel more for

STANDARD OIL ISSUES

CARL H. PFORZHEIMER & CO.
Specialists in Standard Oil and Miscellaneous Oil Securities
25 Broad Street New York

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Aug. 25 Sales	First	High	Low	Last	Change
37⅜	27⅝	38	27⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	July 31, 28	7,100	31¼	31½	30¾	31	— ½
82½	35⅛	85	51¼	(sh) 209,180	N.P.	American Republics Corp.	....	.....	2,800	66	67⅜	62⅞	66	+ 1⅝
50¼	35	51	37½	$56,000,000	$ 25	Associated Oil.	50cQ	June 30, 28	650	49	*51¼	49	50	+ 1⅛
131⅜	104	171½	95¾	50,000,000	100	Atlantic Refining.	$1Q	June 15, 28	47,700	163¼	*171½	160⅜	166½	+ 3½
119	115½	118¼	115	20,000,000	100	do pfd.	$1.75Q	Aug. 1, 28	.....	.....	.....	.....	.....	.....
35½	20¾	27⅛	20⅛	28,725,675	25	Barnsdall Corp. A.	....	Feb. 6, 28	25,500	24¾	*27⅛	24⅛	27	+ 2¼
32½	20½	27¼	22	799,775	25	do B.	....	Feb. 6, 28	87,600	23¾	23¾	23¾	23¾	— ¼
18¼	14	20⅛	12¼	945,888	N.P.	Beacon Oil.	....	.....	6,900	17	17½	16	17	— ⅛
32⅞	20	32¾	24	51,524,150	25	California Petroleum.	25cQ	July 2, 28	.....	.....	.....	.....	.....	.....
96¾	65	94⅞	70	20,785,400	100	General Asphalt.	....	.....	13,800	75½	76½	73	75	+ ⅛
144⅞	107¼	141½	111	6,792,200	100	do pfd.	$1.25Q	Sept. 1, 28	300	116½	117½	116½	117½	+ 1½
175¾	60⅛	167	127	25,000,000	100	Houston Oil.	....	.....	19,000	140	149½	139¾	143¼	+ 4¾
32¾	17⅝	31⅞	21¾	(sh) 500,000	N.P.	Independent Oil & Gas.	25cQ	July 31, 28	7,800	26⅛	26⅜	25½	26⅜	+ ⅛
12⅛	7⅝	39⅝	9	$3,280,340	$10	Indian Refining.	....	Dec. 15, 20	30,400	31⅞	33⅞	30½	33⅜	+ 1⅜
12	7¼	37¼	8½	4,550,110	10	do ctfs.	....	.....	18,600	29⅞	32½	28⅝	32½	+ 3
112	99	244	101	2,296,400	100	do pfd.	....	Dec. 15, 21	400	240	*244	220	244	+24
37¾	20½	39⅛	27⅜	(sh) 3,992,122	N.P.	Lago Oil & Transport.	75cQ	May 1, 28	6,200	31	33⅜	31	31	— ½
18⅛	10	19¾	9⅜	(sh) 1,237,078	N.P.	Louisiana Oil Refining.	.....	.....	11,600	14½	14⅝	14⅛	14⅜	+ ⅛
97	85¼	101	78	$4,000,000	$100	do pfd.	$1⅝Q	Aug. 15, 28	.....	.....	.....	.....	.....	.....
22¾	12	25½	12½	(sh) 330,000	N.P.	Maracaibo Oil.	....	.....	1,900	16⅛	16⅜	16	16¼	— ¼
58½	31	44½	33	(sh) 2,316,692	N.P.	Marland Oil Co.	....	Mar. 31, 27	21,500	37¾	38¼	36½	38	+ ⅜
320	200	360	250	$45,942,800	$100	Mexican Petroleum.	$3Q	July 20, 28	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd.	$2Q	July 20, 28	.....	.....	.....	.....	.....	.....
9¼	3	39	4⅜	(sh) 945,939	N.P.	Mexican Seaboard.	....	Nov. 15, 24	26,400	30	31½	28⅝	31½	+ 2⅛
39⅜	25½	33¼	25⅛	(sh) 1,357,461	N.P.	Mid-Continent Petroleum.	....	Aug. 1, 27	9,500	29¼	30⅛	28½	30	+ ⅜
105	97	115⅛	103¼	$6,718,000	$100	do pfd.	$1.75Q	Sept. 1, 28	.....	.....	.....	.....	.....	.....
3¾	1⅜	7⅜	2⅜	24,298,850	10	Middle States.	....	July 1, 23	11,000	4⅜	5	4⅜	4⅝	0
2¾	1⅜	5⅞	1½	5,501,370	10	do ctfs.	....	.....	3,500	3⅛	3⅝	3	3⅜	+ ½
1⅞	1	2¼	1¼	(sh) 3,500,000	N.P.	Pacific Oil.	....	.....	6,300	1¼	1⅜	1⅛	1⅛	— ¼
65⅞	40⅛	53¾	38¼	$48,807,400	$ 50	Pan American P. & T.	....	Oct. 20, 27	3,600	41½	41½	40½	41	— 1
66⅜	40¼	54⅝	37⅜	121,097,900	50	do B.	....	Oct. 20, 27	18,600	42⅜	42⅞	41½	41⅞	— ⅝
37⅞	16¾	28⅜	15½	(sh) 400,000	N.P.	Pan American Western B.	....	Jan. 30, 27	4,200	17	17⅛	16¾	17	— ⅛
18⅞	8	21¾	11½	(sh) 198,770	N.P.	Panhandle P. & R.	....	.....	2,500	13¾	15⅜	13¾	15⅜	+ 1⅜
85	54	106¼	70	$2,935,200	$100	do pfd.	....	July 2, 23	.....	.....	.....	.....	.....	.....
60¼	36¼	44⅝	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum.	37½cQ	July 2, 28	13,200	40	40½	39	39½	— ⅝
1⅜	½	4¼	½	$29,622,925	$ 25	Pierce Oil Corp.	....	.....	3,400	2¼	2½	2⅛	2¼	0
24	13½	30½	16¼	15,000,000	100	do pfd.	....	Feb. 1, 22	900	20	20	20	20	— ¼
5½	2½	6⅝	3½	(sh) 2,500,000	N.P.	Pierce Petroleum.	....	.....	3,500	4¼	4¼	4	4⅛	— ⅛
33⅞	16¾	26⅞	16	$37,450,850	$50	Producers & Refiners.	....	Sept. 15, 23	4,200	24	24¾	23	24⅜	+ ⅝
50	36⅞	46⅞	41	2,845,350	50	do pfd.	....	May 1, 25	20	42½	42½	42½	42½	+ ¼
33½	25	27½	19	75,959,250	25	Pure Oil Co.	12½cQ	Sept. 1, 28	7,200	23	23⅜	22¾	23	0
115½	111⅜	115	108	13,000,000	100	do 8% pfd.	$2Q	July 2, 28	110	112½	112½	112½	112½	0
28⅝	25⅜	50¾	24	$29,224,894	$25	Richfield Oil.	‡25cQ	Aug. 15, 28	28,800	46¼	47⅞	45⅜	47½	+ 1⅛
54½	44¼	59¼	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares.	$1.879	Aug. 3, 28	7,400	58⅛	*59¼	57½	59¼	+ 1½
47⅞	41⅜	51	40⅝	(sh) 77,590	L2	Shell Transport & T.	$1.455	July 23, 28	.....	.....	.....	.....	.....	.....
31⅜	24⅝	31	23¼	(sh) 10,000,000	N.P.	Shell Union Oil.	35cQ	June 30, 28	18,100	27	27	26½	26⅞	0
26⅜	14¼	24¾	18⅛	$7,208,080	$ 10	Simms Petroleum.	....	Apr. 1, 27	1,900	20¾	20¾	20⅝	20¾	— ⅜
22⅜	15	30¼	17⅜	(sh) 4,501,915	N.P.	Sinclair Consolidated.	....	May 31, 24	111,800	26⅞	27¼	25½	26⅝	+ ⅛
104½	97	109½	102½	$16,604,600	$100	do pfd.	$2Q	Aug. 15, 28	.....	.....	.....	.....	.....	.....
37⅜	24⅛	34	25	27,396,590	25	Skelly Oil Co.	50cQ	June 15, 28	7,900	31	32	30⅞	31¼	+ ½
60¾	50⅜	63⅞	53	(sh) 13,016,434	N.P.	S. O. California.	62½cQ	June 15, 28	21,500	57⅛	59⅜	57	58½	+ 1½
41⅜	35⅛	49	37¾	$607,910,525	$ 25	S. O. New Jersey.	‡25cQ	June 15, 28	54,100	45⅛	45½	44¾	45¼	+ ½
34⅛	29¾	41½	28¾	427,973,275	25	S. O. New York.	40cQ	June 15, 28	63,300	35⅛	36⅛	35⅛	37⅞	+ ¾
34⅞	30	49½	31½	(sh) 1,206,073	N.P.	Sun Oil.	25cQ	June 15, 28	4,800	49⅛	49¼	47¾	47¾	+ 1
101⅝	99	109½	100	$5,000,000	$100	do pfd.	$1.50Q	Sept. 1, 28	.....	.....	.....	.....	.....	.....
6½	3⅛	9½	2½	(sh) 1,121,368	N.P.	Superior Oil Corp.	....	Dec. 20, 20	24,400	6½	7⅛	6⅛	6⅞	+ ⅜
58	45	66⅜	50	$180,480,550	$ 25	The Texas Corp.	75cQ	July 2, 28	43,800	62½	63¼	61¾	62⅞	+ ¾
18⅞	12	17½	12½	8,380,340	10	Texas Pacific Coal & Oil.	....	Jan. 3, 28	3,200	14¼	14⅜	13⅞	14	— ¼
29⅛	19	27⅜	19⅝	(sh) 2,168,410	N.P.	Tide Water Oil Co.	20cQ	June 30, 28	5,100	26½	*27⅜	26½	27	+ ½
90⅛	85	94½	87	$20,705,200	$100	do 5½% pfd.	$1.25Q	Aug. 15, 28	300	87⅛	88⅝	87⅛	88⅝	+ 1
19⅛	15¾	22½	14¾	(sh) 4,796,158	N.P.	Tide Water Associated.	.....	Aug. 1, 27	288,300	21⅛	*22½	20⅜	20¾	— ⅛
90¾	85	90	82⅛	$72,745,900	$100	do pfd.	$1.50Q	July 2, 28	1,800	89½	89¾	89	89½	+ ½
10⅜	3¾	10⅛	7	(sh) 3,742,029	N.P.	Transcontinental Oil.	....	.....	23,000	7⅜	8¼	7⅝	8	+ ⅜
56½	39⅜	57	42¾	$40,791,225	$ 25	Union Oil of California.	50cQ	Aug. 10, 28	9,800	50⅜	51½	50⅛	50¾	+ ⅛
127½	94	128⅛	115½	30,844,600	100	Union Tank Car Co.	$1.25Q	Sept. 1, 28	400	115	116¾	115	116¾	+ ⅝
34½	24½	38⅜	26	(sh) 355,440	N.P.	Warner Quinlan.	50cQ	July 2, 28	12,500	37	39	36½	38¾	+ 1¼
27½	20	26⅝	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining.	25cQ	July 20, 28	1,400	24½	25⅜	24	25⅜	+ ⅞

*New High †New Low ‡Also extras s-Stock Total Sales 1,161,480

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Aug. 24 Sales	First	High	Low	Last	Change
....	....	4	2½	N.P.	Ark. Nat. Gas (new).	1,335	2⅞	3	2⅞	2⅞	+ ⅛
....	....	7½	6¾	N.P.	do pfd.	1,911	7⅜	7½	7¼	7¼	+ ⅛
98⅝	80⅞	120¼	90¾	100	Columbia Gas.	68	119	*120¼	119	120¼	+ 4¼
107⅞	100	108½	107	100	do pfd.	.....	.....	.....	.....	.....	.....
15	7½	10	6⅞	10	Devonian Oil.	12	6⅞	6⅞	†6⅞	6⅞	— ⅛
....	....	15	9¼	10	Dixie Gas & Util.	.....	.....	.....	.....	.....	.....
....	....	95	85	100	do pfd.	.....	.....	.....	.....	.....	.....
117½	115	116	115	100	Duquesne Light pfd.	.....	.....	.....	.....	.....	.....
....	....	85	80½	100	Fayette County Gas.	.....	.....	.....	.....	.....	.....
12¼	6	22	12	N.P.	Houston Gulf Gas.	.....	.....	.....	.....	.....	.....
59¼	37¼	58	48⅝	$ 25	Lone Star Gas.	2,598	51⅞	52⅛	51¾	51¾	0
....	....	36½	36	25	Petroleum Exploration	.....	.....	.....	.....	.....	.....
....	....	50	50	....	Phoenix Oil pfd.	1,300	.50	.50	.50	.50	....
3⅞	3	4	3¼	5	Pittsburgh Oil & Gas.	.....	.....	.....	.....	.....	.....
8	5½	7¼	6	10	Salt Creek Cons.	.....	.....	.....	.....	.....	.....
26½	17	22	16¾	10	Tidal Osage.	.....	.....	.....	.....	.....	.....
43	33	33⅜	30½	N.P.	Waverly Oil Wks. A	.....	.....	.....	.....	.....	.....
....	....	19	17½	$ 25	Wiser Oil.	.....	.....	.....	.....	.....	.....

*New high record †New low.

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Aug. 24 Sales	First	High	Low	Last	Change
95	88	132	120	25	Gulf Oil.	.....	.....	.....	.....	.....	.....
....	....	115	115	....	Houston Gulf Gas pfd.	.....	.....	.....	.....	.....	.....
10¾	5½	9	5½	25	Leonard Oil & Dev.	.....	.....	.....	.....	.....	.....
....	....	.40	.20	....	Phoenix Oil.	.....	.....	.....	.....	.....	.....
....	....	.50	.50	....	do pfd.	600	.50	.50	.50	.50	....
2¼	1¾	....	....	5	Pittsburgh Oil Dev.	1,250	19¼	19⅞	19	19⅞	0
31	19	22	16¾	5	Plymouth Oil.	.....	.....	.....	.....	.....	.....
6	5	4¾	4	5	States Oil.	800	3½	3½	3½	3½	+ ⅛
3¼	1¾	4½	2¼	1	Texon Oil & Land.	.....	.....	.....	.....	.....	.....
23⅝	18	18	15	10	Tidal Osage Non-vgt.	.....	.....	.....	.....	.....	.....

*New High †New Low x Ex Dividend

Oil Dividends

Amount	Payable	Stock of Record
Atlantic Refining q. $1	Sept. 15	Aug. 21
Chesebrough Mfg. q. $1	Sept. 29	Sept. 10
do extra. 25c	Sept. 29	Sept. 10
Cities Service m. 10c	Oct. 1	Sept. 15
do stock. ....½%	Oct. 1	Sept. 15
do pfd m. 50c	Oct. 1	Sept. 15
do pfd. BB m. 50c	Oct. 1	Sept. 15
do pfd. B m. 5c	Oct. 1	Sept. 15
Gen. Asphalt pfd. q. $1.25	Sept. 1	Aug. 15
Houston Gulf Gas pfd. q. $1.75	Sept. 1	Aug. 20
Imperial Oil q. 25c	Sept. 1	Aug. 15
do extra. 12½c	Sept. 1	Aug. 15
Mid-Cont. Pet. pfd. q. ...$1.75	Sept. 1	Aug. 15
Nat'l. Transit q. 25c	Sept. 15	Aug. 31
do extra. 25c	Sept. 15	Aug. 31
Ohio Oil q. 50c	Sept. 15	Aug. 14
Phillips Pet. q. 37½c	Oct. 1	Sept. 14
South Penn Oil q. 50c	Sept. 29	Sept. 15
do extra. 25c	Sept. 29	Sept. 15
Shell Union q. 35c	Sept. 30	Sept. 6
S. W. Pa. Pipe Lines q. ..$1	Oct. 1	Sept. 15
S. O. California q. 62½c	Sept. 15	Aug. 17
S. O. Indiana q. 62½c	Sept. 15	Aug. 16
do extra. 25c	Sept. 15	Aug. 16
S. O. Nebraska q. 63c	Sept. 20	Aug. 25
do extra. 25c	Sept. 20	Aug. 25
S. O. New Jersey q. 25c	Sept. 15	Aug. 25
do extra. 12½c	Sept. 15	Aug. 25
S. O. New York q. 40c	Sept. 15	Aug. 17
S. O. Ohio q. 62½c	Oct. 1	Sept. 7
Sun Oil q. 25c	Sept. 15	Aug. 25
Texas Corp. q. 75c	Oct. 1	Sept. 7
Texon Oil & Land. 10c	Oct. 15	Sept. 15
Union Tank Car q. $1.25	Sept. 1	Aug. 18
Vacuum Oil q. 75c	Sept. 20	Aug. 31
Westland Oil. $1	Sept. 30	Sept. 15

Full Measure

Not a drop more or less.

As pioneers in the manufacture of Visible Gasoline pumps, we have developed *accuracy in dispensing* to a point where the interests of both the station owner and the public are safeguarded 100%.

QUALITY
TOKHEIM
Cut 660 Hand Operated
10 Gallon Visible Pump

gives every customer full measure to the last drop--but not a drop more.

CENTRALIZED CONTROL

Working parts of the pump are so completely interlocking in their action that the operator is limited to one function at a time.

And each operation must be completed before the next is begun. The pump cannot be forced to dispense either more or less than the pre-set quantity.

Its Predetermined Quantity Discharge Tube and patented Syphon Device all compel accurate dispensing, and its Million Gallon Mechanically-operated Recording Meter registers every gallon dispensed.

TOMORROW'S PUMP TODAY

And it will be some time before its equai will be produced.

Send for our Bulletin No. 249

Tokheim Oil Tank & Pump Co.
Fort Wayne, Indiana

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Aug. 25 Sales	First	High	Low	Last	Change
21⅜	17⅛	22⅜	17	£ 4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	400	18	18¼	18	18¼	+ ⅛
21½	17⅝	20½	16⅜	.....	£ 1	do cts. non-voting	.....	.....	.....	.....	.....	.....	.....	.....
3¾	¾	5	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	400	2½	2½	2½	2½	0
6½	2½	9¾	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
69	50	56	49	1,000,000	25	Borne Scrymser	‡$1S.A.	Apr. 16, 28	.....	.....	.....	.....	.....	.....
60	45	76	58	10,000,000	50	Buckeye Pipe Line	‡$1Q	June 15, 28	100	61¼	61¼	61¼	61¼	+ ⅛
126	76½	161	117¼	3,000,000	25	Chesebrough Mfg	$1Q	June 30, 28	.....	.....	.....	.....	.....	.....
22⅝	16¼	23	16	36,123,350	10	Continental Oil	.....	Dec. 15, 27	2,700	17	17	16½	16⅞	— ⅛
137	89	114	88	3,000,000	100	Cumberland Pipe Line	‡$2Q	June 15, 28	40	103¾	103¾	103¾	103¾	+ 1¾
68½	47	88	64⅛	5,000,000	100	Eureka Pipe Line	$1Q	Aug. 1, 28	.....	.....	.....	.....	.....	.....
13½	3½	13	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	300	9	9	9	9	— ½
59¾	23	87¾	27	4,000,000	100	do new pfd	.....	June 30, 26	1,520	75	82¼	75	82¼	+ 1¼
60⅛	35½	89¾	35	2,000,000	100	do old pfd	.....	June 30, 26	380	77	81¼	74	81¼	+ 1¾
68½	54	84⅞	60	73,685,700	25	Humble Oil & Refining	‡30cQ	July 1, 28	14,900	80	80⅜	77¾	80⅛	+ ⅜
182	123¾	245	176½	20,000,000	100	Illinois Pipe Line	$6S.A.	June 15, 28	650	205	207¼	205¾	207¼	+ 2⅛
64¾	37¾	71⅞	56¾	(sh) 6,591,458	N.P.	Imperial of Canada	‡25cQ	Sept. 1, 28	2,800	66⅞	69	67	68	+ 1⅛
94½	61	89½	74⅞	$ 5,000,000	$ 50	Indiana Pipe Line	‡$1Q	Aug. 15, 28	200	81½	81½	80	80⅞	— ⅝
39	28¼	45¼	35	(sh) 7,123,544	N.P.	International Petroleum	25c	June 30, 28	6,800	37⅞	38¼	37⅝	38	— ¼
24	13¼	32⅜	19⅜	6,363,350	12.50	National Transit Co	‡25cQ	June 15, 28	1,000	21¾	21¾	20¾	21	— ¼
44½	31¼	59⅞	37½	5,000,000	100	New York Transit	.....	July 15, 26	150	53	53½	53	53½	+ ½
100	70	125	94	4,000,000	100	Northern Pipe Line	(a)$3S.A.	July 2, 28	.....	.....	.....	.....	.....	.....
67⅞	52	68¼	58	60,000,000	25	Ohio Oil Co	‡50cQ	June 15, 28	1,700	62⅝	63	61¾	62⅛	— ½
39	12	84	28	10,000,000	25	Penn Mex. Fuel	$1.25	May 31, 28	500	39⅞	39⅞	35	35	— 3
55½	45⅜	56	46¼	60,479,600	25	Prairie Oil & Gas	.....	Aug. 31, 27	10,000	47¼	47¼	†46¼	47	0
190	132	223	172	81,000,000	100	Prairie Pipe Line	$3.50Q	July 31, 28	13,600	188	188	183¾	184¾	— 1¾
201½	175½	186	167	4,000,000	100	Solar Refining	$5S.A.	June 20, 28	200	181	181½	179	181	+ 1
27¼	15½	35⅞	12	1,000,000	10	Southern Pipe Line	$2	Dec. 1, 27	1,200	15½	16	15½	16	+ ⅞
41½	35	53	36¾	20,000,000	25	South Penn Oil	50cQ	June 30, 28	5,400	47	51⅞	48	49	+ 1
83	55½	100¾	70	3,500,000	100	South West Pa. Pipe Lines	‡$1Q	July 2, 28	50	80	80	80	80	— 2½
81¼	64⅝	83⅜	70⅞	230,788,513	25	S. O. Indiana	‡62½cQ	June 15, 28	9,500	75½	75⅞	74¾	75⅛	— ¼
20⅞	14⅝	27¾	15	8,000,000	25	S. O. Kansas	.....	June 16, 24	300	22	22	21¾	22	— ¼
130	111½	136⅛	122¼	17,103,011	25	S. O. Kentucky	$1Q	June 30, 28	600	126¾	127⅛	126¼	127⅛	+ ¼
49½	40	45⅞	39⅞	4,601,100	25	S. O. Nebraska	62cQ	June 20, 28	1,200	44	44¾	43	43	— ⅛
87½	72	84¾	71	14,000,000	25	S. O. Ohio	62½cQ	Apr. 2, 28	1,950	75½	*84¾	78½	83	+ 7½
122	117¼	125	117	7,000,000	100	do pfd	$1.75Q	Sept. 1, 28	10	120	120	120	120	+ 1¼
21	14½	26	16	30,844,000	25	Swan Finch Co	30cQ	June 30, 28	150	22	23	22	22½	+ 1¾
.....	.....	87⅛	72	124,941,600	25	Vacuum Oil	75cQ	June 20, 28	800	81	82½	80¼	81¾	+ ⅝

*New high †New low xEx dividend ‡Also extras. (a)$50 Special Sept. 1, 1928.

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Aug. 25 Sales	First	High	Low	Last	Change
2⅛	.55	1½	.65	$ 5	Amer. Con. Oilfields	8,800	75	80	71	74	— 6
7½	2¾	6⅝	3⅛	N.P.	Amer. Maracaibo	2,600	4⅜	4⅝	4⅞	4⅝	+ ⅛
2¾	1	4	2¼	$ 10	Argo Oil	200	2½	2½	2½	2½	0
9¾	6¾	10¼	7⅝	10	Arkansas Nat. Gas	.....	.....	.....	.....	.....	.....
40	20¼	40½	32¾	N.P.	British American	.....	.....	.....	.....	.....	.....
28¼	15½	23⅞	13	25c	Carib Syndicate N	1,200	14½	15	14	14⅞	+ ⅜
.....	.....	.....	.....	....	do ctfs. of dep	.....	.....	.....	.....	.....	.....
58¾	40¼	71¼	54	$ 20	Cities Service	6,300	65¼	65⅜	65¼	65⅜	+ ¼
95⅜	87	103½	94½	100	do pfd	1,200	99⅛	100	99¼	99⅜	+ ½
8⅞	7⅜	9⅝	8⅞	10	do pfd. B	100	9⅜	9⅜	9⅜	9⅜	0
29¼	22½	94	28¼	10	do banker's shares	200	94	*94	94	94	— 1
3⅞	1⅝	2¼	1⅛	1	Colombia Syndicate	3,800	1¼	1⅛	1¼	1¼	0
9¾	6⅜	8⅛	6⅜	10	Consolidated Royal	.....	.....	.....	.....	.....	.....
14⅜	9½	17½	10	N.P.	Creole Syndicate	12,500	12⅝	13⅜	12	12⅞	+ ¼
3	.50	3¼	.76	N.P.	Crown Central	300	1⅞	2	1⅞	2	+ ⅜
12	4	30⅛	8⅛	N.P.	Darby Petroleum	400	21	21	20¼	21	+ ⅞
11½	4	13½	7⅞	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2½	.74	22	1	N.P.	Derby Oil & Refining	400	1½	1¾	1½	1¾	+ ⅜
16⅜	4	15½	7½	N.P.	do pfd	2,500	15	15	15	15	0
3¾	1	2	1	N.P.	Gibson Oil	.....	.....	.....	.....	.....	.....
2	.40	.53	.15	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
118	86¼	148½	101½	$ 25	Gulf Oil Corp	2,900	125¾	125	123	124	— 1¾
2½	.80	7⅞	1	10	Intercontinent Pet	32,500	1¼	1⅝	1¼	1½	+ ⅛
2¼	1½	3	1¼	N.P.	Kirby Petroleum	100	1⅝	1⅝	1⅝	1⅝	0
10⅞	5⅛	9⅜	5½	N.P.	Leonard Oil & Dev	100	6	6	6	6	0
27½	20	32⅜	20	N.P.	Lion Oil & Refg	.....	.....	.....	.....	.....	.....
59⅜	37	57	48⅝	$ 25	Lone Star Gas	2,800	51⅞	52⅜	51½	51¾	— ⅛
2⅞	.80	1⅞	.78	1	Magdalena Synd	18,600	1⅛	.99	.85	.92	— ⅛
21½	20⅞	22⅛	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	36½	N.P.	Margay Oil	.....	.....	.....	.....	.....	.....
3	1½	40½	40½	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	8	4	N.P.	Mexico-Ohio Oil	100	4½	4½	4½	4½	— ¼
1½	1	1½	.76	$ 1	Mountain & Gulf	500	84	84	81	81	0
29¼	22¾	28⅝	22⅜	10	Mountain Producers	3,000	23¼	23½	23⅛	23½	+ ¼
5⅞	4⅝	5⅝	4¾	5	New Bradford	1,000	5	5	4⅞	4⅞	— ⅛
6¼	4	5½	3⅜	10	New England Fuel	.....	.....	.....	.....	.....	.....
16	9¼	11⅜	7⅛	1	New Mex. & Ariz	4,600	10¾	10⅞	9¾	10	— ⅞
13⅞	9	15½	11½	25	New York Oil	.....	.....	.....	.....	.....	.....
12⅝	9½	13¼	10¾	N.P.	North Cent. Texas	1,200	12	12½	12	12½	+ 1
23⅞	21¼	...	...	...	Okla. Nat. Gas ctfs	.....	.....	.....	.....	.....	.....
9⅜	3¼	6	2¼	N.P.	Pandem	4,200	3	3	2⅛	3	0
12⅛	7	15⅝	8½	N.P.	Panapec Oil	25,000	11½	11¾	11	11	— ½
9	7⅝	16½	10⅜	$ 25	Paragon Refg	100	16½	16½	16½	16½	0
.37	.25	9	4	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅜	7¾	5⅛	10	Pennok Oil	100	5½	5½	5½	5½	0
.....	.....	4⅛	3⅛	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24⅜	7	14½	8	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
15½	3½	13	4⅛	N.P.	Reiter-Foster	18,500	10⅛	11⅞	10¼	11½	+ ½
28⅜	15	31½	18	$ 25	Richfield Oil pfd	300	23⅞	23⅞	23¾	23¾	— ¼
7	4½	9⅞	4⅝	N.P.	Ryan Consolidated	900	5⅝	5⅝	5½	5½	— ½
8	5¼	7¼	5¾	$ 10	Salt Creek Cons	.....	.....	.....	.....	.....	.....
35½	27¼	35	27	10	Salt Creek Prod	1,700	27¾	28	27¾	27⅞	+ ⅛
7	1¾	3½	1	5	Savoy Oil	.....	.....	.....	.....	.....	.....
26½	17	22⅞	13	10	Tidal Osage	500	17½	17¾	17	17	— ½
23¾	15	21¼	13½	10	do non-voting	600	16½	16½	16	16	— ½
92	63½	87	75	100	Transcontinental pfd	.....	.....	.....	.....	.....	.....
23¼	7	53½	18	10	Venezuela-Mexico	100	53½	*53½	53½	53½	— 3
7⅞	4¼	6⅝	4⅞	5	Venezuelan Petrol	1,600	5	5⅜	5	5⅛	+ ⅛
32⅝	19½	25	17½	N.P.	Wilcox Oil & Gas	100	18	18	18	18	— ½
8	4¾	8¼	5¾	$ 1	Woodley Petroleum	.....	.....	.....	.....	.....	.....
6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	200	5¾	5¾	5¾	5¾	0

*New High †New Low xEx Dividend

New York Curb Bonds

Week Ending Aug. 24

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	101½	101	101	0
Cities Serv. 5s '66	94¾	93⅜	93½	+1⅜
Cities Serv. 6s '66	103⅝	103⅜	103½	— ⅛
Cities Serv. G 5½s '42	93¾	93½	93¾	0
Cities Serv.	100	99⅛	100	+1¼
Cont. Oil 5½s '42	95¾	94½	95½	+1
Empire O & R 5½s '42	92½	92	92¼	— ⅜
Galena Oil 7s '30	100½	100½	100½	0
Gulf Oil 5s '47	100⅛	99¾	99¾	+ ⅜
Gulf Oil 5s '47	100⅛	99¾	99⅞	— ¼
Independent Oil 6s '39	101⅞	100⅞	101	0
Richfield Oil 5½s '31	100	100	100	0
Richfield Oil 6s '41	136¼	133	136¼	+3⅛
Sun Oil 5½s '39	101⅛	100½	101	0
Trans. Cont. Oil 7s '30	105¾	105⅝	105¾	+ ⅛
Valvoline Oil 7s '37	107	106	107	+1
Warner Quinlan 6s '42	107¾	107	107¾	0

New York Bonds

Week Ending Aug. 24

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	102¾	102½	102½	0
Atlantic Refg. deb. 5s	100	99⅞	100	+ ⅛
Barnsdall Corp. 6s	105½	101	105¼	+4
Barnsdall Corp. 6s ex-war.	91	90	90¾	+ ¾
Cal. Pet. 5s	98¾	98½	98½	0
Cal. Pet. 5½s	101	100	101	— ¼
General Asphalt 6s	108	107¼	108	— ⅜
General Petroleum 5s	100⅛	100⅛	100⅛	0
Humble Oil & Refg. 5½s	101⅛	100⅞	100⅞	0
Humble Oil & Refg. 5s	99¾	99⅛	99⅛	— ¼
Mid Cont. Pet. 6½s	105¼	105	105	— ¼
Pan Amer. P & T 6s	102¾	102½	102¾	+ ¼
Pan Amer. P & T 6s	94	93	93	— 2
Phillips Pet. 5½s	92	91⅝	92	+ ½
Pure Oil 5½s	99⅝	98	99½	+ ⅜
Shell Union Oil 5s	96¾	96	96¾	+ ½
Simms Pet. 6s	100¾	100½	100½	— ½
Sinclair Con Oil 7s	101⅞	101	101½	0
Sinclair Con. Oil 6½s	99⅛	98½	99⅛	+ ¼
Sinclair Con. Oil 6s D	99	98½	98½	— ½
Sinclair Crude 5½s	98	96⅞	98	+1
Sinclair Pipeline 5s	93¼	93	93¼	+ ¼
Skelly Oil 5½s	92	92	92	+ ⅛
S. O. N. Y. 4½s	95	94½	95	+ ¼
S. O. N. J. deb. 5s	103½	102⅞	103	— ⅛
Union Oil of Calif. 6s A	109½	109⅜	109½	+ ½
Union Oil of Calif. 5s C	98¼	98¼	98¼	+ ⅝
White Eagle Oil 5½s	96¾	96½	96½	— ¼

Cleveland Stock Market

August 24	Par Value	Bid	Asked	Last Sale
Canfield Oil	100	110	135	115
do pfd	100	102	...	101
Fred G. Clark	10	7	8	8
National Refining	25	35	35¾	34¾
do pfd	100	131	135	131
Paragon Refining Co	25	16	16½	16¼
do pfd	100	115	125	125
do ct'fs of dep	...	15½	17½	16½

its light crude. The new proration plan effective July 1 in the Yates pool resulted in increased production for Simms, they reported.

The decline in profits of the H. F. Wilcox Oil & Gas Co. caused its directors to pass the dividend of 25 cents a share which ordinarily would have been paid Aug. 10.

South West Pa. Lines To Reduce Capital

CLEVELAND, Aug. 25.—A special meeting of the South West Pennsylvania Pipe Lines has been called to be held Oct. 3 at Oil City, Pa., to vote on a reduction in the capital stock from $3,500,000 to $1,750,000 and to lower the par value of the stock from $100 to $50 a share.

If this plan is approved a special dividend of $15 a share will be paid about Dec. 31 from a stock reduction fund. The company has already paid this year a special dividend of $15 a share.

Financial Notes

Houston Oil Co.—$6,000,000 additional certificates of beneficial interest in common stock, par value $100 per certificate, has been listed on the New York Stock Exchange. These are to provide for conversion of 10-year 5½ per cent convertible notes due in 1928.

Independent Oil & Gas Co.—300,000 additional no par common shares have been listed on the New York Stock Exchange. This stock is that exchanged for control of the Manhattan Oil Co. of Kansas City.

Associated Oil Co.—Kenneth Dawson, Portland, Oreg., steamship executive, has been elected a director. Associated has called for redemption Sept. 1 $1,230,000 of 12-year 6 per cent notes under semi-annual sinking fund requirement. Last April 1 $18,000,000 of the original issue of $24,000,000 remained outstanding.

Transcontinental Oil Co.—157,971 additional shares of no par common stock has been listed on the New York Stock Exchange and sold to holders of stock purchase warrants issued with $12,000,000 10-year 6½ per cent sinking fund bonds. The company's capital and funded debt consists of 3,842,029 common shares, 157,500 7 per cent convertible preferred stock, the $12,000,000 bonds, and $1,200,000 5 per cent National Steel Car Line equipment trust certificates.

LOS ANGELES, Aug. 25.—J. C. Axelson, president, and C. E. Ellwood, sales manager, of Axelson Machine Co., left recently for a month's business trip. Stops will be made at the St. Louis plant and New York. On the return journey, several days will be spent in Tulsa.

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Single Copies 10¢
Subscription rate $3.50 per yr. in U.S.A. and Mexico (U.S. money)
$4 in Canada
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Members of Audit Bureau of Circulations and Associated Business Papers, Inc

NATIONAL PETROLEUM NEWS

Branch Offices:
LOS ANGELES
Petroleum Securities Building
TULSA.
World Building
NEW YORK
342 Madison Avenue
HOUSTON
612 West Building
CHICAGO
35 Wacker Drive

Published by the National Petroleum Publishing Co. MAIN OFFICE · 1213 W. 3rd St., Cleveland, Ohio. Copyrighted 1928

Vol. XX Cleveland, Ohio, August 29, 1928 No. 35

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